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ABSTRACT

This report summarizes the research and results of the Evaluation of Experiential Learning Project, undertaken to (1) assess the impact of experiential learning programs on the social, psychological, and intellectual development of secondary school students; and (2) use these data to identify those program variables most effective in facilitating such development. The project evaluated 30 experiential learning programs in independent, public, and parochial schools around the United States during 1978 and 1979. Program activities examined included volunteer service, political and social action, outdoor adventure, internships in government and business, and research in the community. The results of the study demonstrated that experiential programs had a positive impact on student participants. The opportunities to act autonomously and to develop collegial relationships with adults were the two features of each student's experience that were the most powerful predictors of personal growth. Regular seminars for program participants were found to be the most important positive program feature. Appended to this report are: (1) an extensive bibliography, (2) test instruments and questionnaires utilized in the evaluation, and (3) a lengthy review of the theoretical foundations and recent research on experiential education. (GC)

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NATIONAL ASSESSMENT OF EXPERIENTIAL EDUCATION:

A FINAL REPORT

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Chapter One

INTRODUCTION

During the 1970's, experiential education became an increasingly significant feature of the rhetoric and practice of American education. All of the major commissions and panels which studied secondary education and adolescence in this decade recommended that schools extend the depth and breadth of experience available to adolescents.[1] The most recent example was the 1979 study of high schools by The Carnegie Council on Policy Studies in Higher Education, chaired by Clark Kerr. It strongly urged more experiential learning, going so far as to recommend that juniors and seniors should attend classes three days a week and devote the other two to education-related work or community service. While strong endorsements for experience-based education from leading educators and social scientists abound and continue to appear regularly in the literature, there is relatively little "hard" evidence about the impact of such programs on student participants. Little effort has been made to systematically test the assumptions underlying the recommendations for the practice or to empirically investigate which specific forms or formats of experiential programs may be the most effective in realizing the hypothesized benefits. The Evaluation of Experiential Learning Project was undertaken to do just that--to assess the impact of experiential education programs on the social, psychological and intellectual development of secondary school students and to use this data to empirically identify the program variables which are most effective in facilitating such development.

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[1] National Association of Secondary School Principals (1972), Weinstock (1973), National Panel on High Schools and Adolescent Education (1975), National Commission on the Reform of Secondary Education (1973), Center for Youth Development and Research (1973), and Panel on Youth of the President's Science Advisory Committee (1973).

The project, initiated by the Commission on Educational Issues and co-sponsored by the National Association of Secondary School Principals, National Association of Independent Schools, and the National Catholic Education Association evaluated 30 experiential learning programs in independent, public and parochial schools around the country during 1978 and 1979. Approximately 4,000 students participated in these 30 programs. The Center for Youth Development and Research, University of Minnesota, conducted this research project.

For the purposes of the study, experiential programs are defined as "educational programs offered as an integral part of the general school curriculum, but taking place outside of the conventional classroom, where students are in new roles featuring significant tasks with real consequences, and where the emphasis is on learning by doing with associated reflection." The kinds of program activities include volunteer service, political and social action, outdoor adventure, internships in government and business and research in the community. The study encompasses virtually all forms of what is termed experiential education in secondary education with the notable exception of work-related or vocational programs and the Experience Based Career Education Program (EBCE).[2]

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[2] Vocational, EBCE, and work-related programs are not included because they have already been extensively evaluated, and we thought our resources should be devoted to evaluating those experiential programs which have received less attention.

Historical Background

Learning through experience is the original educational method. In tracing its roots, therefore, one could begin almost anywhere. For our purposes it makes best sense to begin about the turn of the present century. It was at that time that people began to explicitly discuss it as an intentional tool of formal education. Even then, however, experiential learning was not so much the concern of professional educators as it was of philosophers, psychologists, and social reformers.

It illumines both the history and the contemporary case for experiential learning to recall that at the turn of the century it was not an educator but Jane Addams, a social reformer, who most soundly chastised education for its "remoteness from life"; it was William James, the psychologist (and philosopher) who attacked the "spectator theory of knowledge," denied the dualism of thought and experience, and argued that meaningful ideas are those that make concrete differences in actual life; and it was John Dewey, the philospher (and psychologist, etc.) who extended James' ideas into a more refined theory of experience and suggested their further application to the practice of teaching and to the structure and function of schools. While educators, and experiential educators particularly, now claim Dewey and James as their own, their early interest in experience was more epistemological than pedagogical, and their ideas more closely attended to by philosophers than by teachers.

Despite, perhaps even because of such foundations, the use of experience as a deliberate educational method was less than a sweeping phenomenon at the beginning of the 20th century. Educators were embroiled in disputes such as over the utility of reciting Latin verbs for developing mental muscles.

Whether or what one learned by doing, or how instruction could draw from and affect social experience, were issues over which no swords (and few pens) were being drawn.

Among early advocates for educational experiences resembling those examined in this study were the agrarian reformers and the populists of the 1880's and 1890's. While voicing a faith in formal education, they also criticized the schools for dealing too much with books and not enough with life--especially agricultural life. A committee report to the national convention of the Grange in 1893, for example, emphasized that an appropriate education for farmers should feature gaining "practical knowledge. . .from the various sources that are open to him in his daily life" (Welter, 1962, p. 162). In the 1890's, Liberty Hyde Bailey of Cornell University was another vocal advocate of a more experiential curriculum, calling for an end to screwed down seats and for the establishment of active learning in shops, gardens, and fields.* Such calls for more practical and active learning were heeded, but rarely by the school establishment. The educational impact of the agrarian-populist-naturalist movement(s) was largely limited to fostering after-school activities and to the establishment of boys' and girls' agricultural and naturalist clubs. Such organizations had, and continue to have, a rather loose and uncomfortable relationship with the schools.

Within the schools, "activity learning" stands as the most direct progenitor of what is currently called experiential learning. There were several centers of this approach in the late nineteenth century, the most prominent (and controversial) being those based on the ideas of the Swiss educational reformer Johan Pestalozzi, and the German, Fredrick Froebel. Both argued that the most effective learning is achieved through doing. The centers using their methods, however, were isolated and private efforts involving only very young children.

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*A favorite, and typically colorful saying of Bailey's was: "There is as much culture in the study of beet roots as in the study of Greek roots: (Reck, 1951, p. 8).

It was with John Dewey's Laboratory School that the present story really begins. Dewey argued that life itself should furnish the ground of education and that learning should be a by-product of social activity and natural curiosity. For him, however, this did not translate into taking instruction out into the community so much as it meant making the school itself a community and, within it, keying instruction off the activities engaged in and the interests expressed by the children. As such, Dewey's school resembled a contemporary open school more than a community-based experiential program.

For the first 50 years of the 20th century the development and spread of experiential (or activity-centered) learning rather directly paralleled the history of the progressive education movement. From the late 1890's through the years of the First World War, progressives placed great emphasis on building curriculum around the actual activities of mankind. An explicit goal was to prepare students to lead in social reform--after graduation. After the war, and through the 20's, the social reform emphasis was largely eclipsed by the rhetoric of the new child-center psychology. and self expressionism supplanted social action as the goal of a progressive education. This expressionism gradually dissipated into what Counts called "romantic sentimentalism" (in Bowers, 1969, P. 14) and became the target of Dewey's stinging criticism in such writings as Experience and Education (1938/1972).

One notable exception to this general trend was the Project Method advocated by William Kilpatrick (1918). Like the "child-centered" progressives he emphasized activity based on the child's interests. Unlike them, he insisted that activities be "purposeful," stressed group over individual effort and, expecially for older youth, located the activity in the social environment outside the school. Students were encouraged to learn in real situations and to directly apply their knowledge and skills toward the welfare of others. An important aim of the method was to instill attitudes of participation and democratic sharing, and each group of students working on a given project was regarded as an embryonic democratic society. The Project Method, in its full sense as envisaged by Kilpatrick, was not widely implemented. It had some success and acceptance in rural poverty areas (Appalachia and Southern Black Communities) but was not widely applied in northern and urban areas where curriculum requirements relegated projects such as he advocated to after-school club events--where they were tried at all.

Throughout the 30's many progressives argued loudly and boldly that the social role of the schools should be to inculcate (even indoctrinate) in students the values of radical social reform and to teach the attitudes, knowledge, and skills necessary for fundamental social change. The problems of the community were to be made the central focus of the curriculum, and problem solving the major student activity. However, even the most radical spokesman of the idea, George S. Counts (Dare the Schools Build a New Social Order, 1932), saw social improvement more as the result of education than as a part of it. Teachers were exhorted to radical action, but not students--at least not as directly or to the same degree.

This is not to say that young people were completely apathetic and quiescent in these years, or that no efforts were being made to elicit their participation. Book and pamphlet titles such as *Junior Citizens in Action* (Hepner & Hepner, 1928), *Development of Character through Community Problem Solving* (Rasey & Schall, 1929), and *Mobilizing Unemployed Rural Young Young People for Growth Through Constructive Programs of Study and Activity* (in Hanna, 1936) lie now in silent tribute to the efforts of many to combine learning and social action. Paul Hanna's 1936 book entitled *Youth Serves the Community* reads as if it were written in the mid-1970's. In it he described scores of youth participation projects that flourished in the 1930's. Significantly, however, most of the projects were sponsored by non-school clubs and organizations. Those that were school-related were commonly run as extra-curricular activities or as one-time-only special events. The writers' intent seems more to have been to encourage schools to try such activities than to report on actual instances of their implementation. Thus, even at the height of interest in youth action and social reform, there's little evidence that many schools were promoting youth participation as either a social or educational activity.

In retrospect, it appears the movement for social reform through the schools spawned more rhetoric and controversy than new educational practice. Finally, with the ebbing of the depression and the rise of World War II, the idea seems to have faded out altogether. A post war attempt to revitalize the idea of direct student action (*School and Community: The Philosophy, Procedures and Problems of Community Study and Service through Schools and Colleges*, E. G. Olsen, 1945) turned out instead to have been a movement's dying gasp.

Following the Second World War, the strongest drive for an experience-based curriculum came not from old line progressives but grew out of the resurrected vocational education movement under the leadership of Charles Prosser of Dunwoody Institute in Minneapolis, Minnesota. Along with other similarly-minded individuals, Prosser promoted what came to be called Life Adjustment education. More a general philosophy than a program, Life Adjustment curricula featured functional experience in practical arts, health, home and family life, physical fitness, civic competence, and war experience. Soaring to great popularity by 1950, it found enemies in McCarthyism, a revived concern for the "basics," and its own muddled philosphy. It was functionally dead by the mid-fifties--condemned by conservatives and disowned by progressives.

Curiously, the fearful and passive fifties saw the development of what is still the largest community and experience-based educational project ever undertaken. The Citizenship Education Project (CEP) out of Columbia Teachers College stressed partipatory skills and direct community experience. "Hundreds of laboratory practices detailed how teachers and students could engage in action-oriented problem-solving in the schools and in the community" (Butts, 1977, p. 64). Launched with great fanfare, and with generous funding and prestigious endorsement, the project involved thousands of teachers from hundreds of schools in workshops and training programs. Its famous "brown box" of teaching ideas contained hundreds of detailed guides to social investigation and political action. Its timing could not have been worse. It ran aground on the caution of teachers and apathy of students, and by the time participatory democracy became a battle cry of the sixties the project was but another dim memory.

The activist, participatory sixties found the educational establishment treading a more quiescent, more traditionally academic path. The chief emphases were on teaching the structures of the disciplines, on systematic acquisition of knowledge, on learning how to think. Toward the end of the decade "relevance" was a catchword, but it was taken to mean the classroom study of hot topics, flashy materials, more discussion (and simulation) of, but not direct participation in, real life situations.

The end of the 1960's and the beginning of the 1970's marked the return of experiential, community-based educational activities. It's fair to say that the strongest pressure came from students themselves. Students, especially college students, were in the streets already--and not only in protest. A Gallup Poll taken in 1971 revealed that approximately half of all college students had given some time to volunteer service which, if accurate, added up to more than four million student volunteers (National Student Volunteer Program, 1972). Colleges responded to student activism with a variety of volunteer and field study programs. In 1963, there had been fewer than 5,000 college students in campus-based volunteer programs. By 1966 there were some 250,000 and by 1971 nearly half-a-million (ibid.). As colleges were accommodating to student interest and pressure, high schools began following their lead. A 1973 poll by the National Association of Secondary School Principals (NASSP) turned up over a thousand "action learning" programs in their member schools. Nearly all of these had been in operation less than three years, a great number featured some form of volunteer community service, (NASSP. 1974).

By the mid-1970's experiential learning was clearly back on the educational agenda and, as during the 1890's, the impetus had come from outside the school establishment. Partly it was the pressure of social events: Students were (or were thought to be) demanding relevant action. Partly it was the pressure of outside criticism: social critics were attacking the practice, effectiveness, and the social role of schools. Partly it was the pressure of changes in fundamental social structures: basic institutions--family, school, church, and work place--were in disequilibrium, with the functions of each no longer very comfortably defined or differentiated. Combined, these pressures prompted many educators to question the adequacy of prevailing methods for helping students meet the social and personal challenges facing them.

Contemporary Rationales

To understand the present reemergence of experiential education as a knee-jerk reaction to outside pressure alone, or as a superficial attempt to modernize the curriculum would be to misrepresent it. Present rationales reflect a more serious analysis, and its advocates a more serious concern than is typically found in a crisis literature. The arguments draw upon a rich and voluminous literature, the thrust of which is that our basic social institutions are failing to adequately nurture the social, psychological, and intellectual development of the young, with potentially disastrous consequences for individual development, for schools, and for society. In comparison with earlier rationales for experiential approaches, the present arguments tread a middle path between the radical reform emphasis of the thirties and the romantic "child centered" approach of the 1920's. Perhaps time will tell whether current practices combine the best or the worst of both worlds. The major issues raised by experiential educators are highlighted below, with a more detailed account appearing in Appendix B which comprises a review of both the theoretical and research literature related to experiental education.

Social Development

Despite lingering sentimentality about the joy and innocence of youth, the prevailing picture of what it means to be young in America is not a happy one. Adolescence is variously described as an "absurdity" (Goodman, 1956), and a "predicament" (Mitchell, 1975). The words "youth" or "juvenile" in a newspaper article or govenment report are more likely than not to be modifiers of terms like offender, prostitute, runaway, or unemployed. In response to this, experiential educators point to particular problems in the status and social development of adolescents. One is that cultural practices and institutions serve to diminsh the significance of the adolescent stage by treating these years as a "time zone in which the person acquires immunity from social responsibility" (Mitchell, 1975, p. 237). The consequence is that youth are denied a recognized and valued role in the society (Erikson, 1968 ; Konopka, 1973). With no socially acknowledged need for their talents or energies, young people are urged to stay out of the adult, especially the adult economic world. To ensure the advice is taken, they are assigned (until 14 or 16 by law) to schools, and are being kept there for longer periods of time. In schools and elsewhere there is little opportunity for a young person to be a contributor or to be recognized as a contributor; to experience the satisfaction of undertaking a needed task and completing it creditably; to feel the joy and endure the pain of significant involvement in the world; of acting and not always just preparing for action. Some official attention has recently been focussed on this situation and the problems resulting from it. The previously cited reports of several national commissions and panels have argued that youth have far too narrow an experience and associational base, are not exposed to a large enough slice of the economic, political, cultural world, and are not given sufficiently responsible and consequential tasks to accomplish. The result, it is argued, is inadequate preparation for the key adult roles of worker, parent, citizen,and caretaker (Brown, 1973; Coleman, 1974; Martin, 1976).

A less discussed, but even more immediate consequence, is that by defining the young as students rather than as contributors, and by incarcerating them in schools, society denies itself the benefits of the immediate and substantial contributions which young persons could be making toward a more healthy and more just society. It is indicative of the real social role of the young that even among advocates of experiential learning the immediate need for youth's contribution is the least emphasized argument for the practice.

Psychological Development

If a passive and narrowly circumscribed student role bodes ill for the social development of young people, the consequences for personal and psychological development are no less destructive. Serious research into the psychological impact of schools indicates that their effect is largely negative. Among the findings are that self esteem, interest in learning, and personal autonomy in learning decrease with time spent in school (Sprinthall and Mosher, 1976). Other writers (e.g. Dreeben, 1968; Sizer, 1973) stress that the "hidden curriculum" is in large part responsible for these negative outcomes in that it teaches youth they are impotent, irresponsible, and must be controlled and managed by others (in case they somehow missed the message from the general society).

It's doubtful that merely reconstructing the curriculum or modifying the schools could overcome these effects without complementary changes in other social arrangements and institutions. Yet experiential educators argue that something must be done, that something can be done, and that a reasonable starting place is the school itself. For help in deciding what to do, they draw attention to current psychological research which is with increasing clarity mapping out the dimensions of psychological development of children and adolescents: personal (Erikson, 1968; Elkind, 1979); ego (Loevinger, 1976); moral (Kohlberg and Gilligan, 1971); and intellectual (Piaget, 1970); and to draw from this literature its implications for practice. Without attention to this dimension, they argue, educators are little inclined and poorly equipped to meet the challenge that the most serious aim of education be to deliberately promote the psychological development of all students (Dewey, 1934/1964) Kohlberg and Mayer, 1972).

Academic Learning and Intellectual Development

An important argument of experiential educators is that for schools to concern themselves with only intellectual growth is both naive and self defeating. It is naive in the assumption that young people will spontaneously flower into mature human beings without the challenges and social interactions that a less schooled society made possible (or mandatory); self defeating in the assumption that intellectual growth can be achieved without deliberate attention to total personal development. Yet, even within this narrowed focus the schools are judged to be failing (Jencks, 1978). One clue to this, suggested by developmentalists, is that academic achievement is partly a function of the level of intellectual and psychological development of the learner, and that instruction, to be effective, must take into account the individual's level of development (Sprinthall, R.C. and Sprinthall, N.A., 1977).

From a more traditional perspective, Tyler (1977), and Coleman (1979) have argued that academic content and theory have become too separated from application in secondary schools. They suggest that a necessary step in learning any content is the application of that knowledge to real situations, a process that is absent in most school programs. The consequences of removing theory from application are that students' motivation to learn decreases as they fail to see a connection between what is learned in schools and their experiences in the world; the opportunity is lost to generalize from particular instances to general principles and to transfer this learning to new situations; and students are not able to practice what they have learned and to evaluate the usefulness of acquired knowledge and skills.

Contemporary Practice

The response of educators to the arguments and the social pressures outlined above have taken many forms, including ignoring them altogether. The focus of this study, however, was on the particular response which calls for experience-based, largely off-campus educational programs. The programs operate under a variety of titles including action learning, youth participation, service learning, and community internships. What they have in common is an emphasis on off-campus activity, on engaging students in new roles of significant responsibility, and in learning by doing and associated reflection. What they aim to acomplish is to more effectively promote the social, psychological, and intellectual development of students.

Dimensions of the Study

This inquiry into experiential education was conducted in several phases which are summarized here and discussed in more detail in the following chapters. The first involved identifying some 30 exemplary programs that represented a variety of program types, schools, and communities. The directors of these programs were then brought together to describe what they believed to be the actual effect of their programs on students. They were not asked "what should happen?" but what they had directly experienced, seen, and heard. From their responses, and a subsequent survey (based on them) of 4,000 participants in experiential programs, emerged the central hypotheses about the effects of experiential education which were the focus of the study.*

The next task was to translate what were essentially self reports into research questions suitable for more rigorous examination. The most frequently cited outcomes fit into three major categories--social, psychological and intellectual development. Instruments appropriate for measuring these effects were chosen from among standardized instruments and, when none suitable were found, developed by the project's directors. These were combined into a test battery which was administered on a pre and post basis to participants in 27 experiential programs and to six comparison groups. In addition to paper and pencil tests, information was gathered through questionnaires relating to each participant's particular experience; student evaluations of their programs; systematic observations of parents, teachers, and community supervisors; student journals and writing samples; case studies of individual students and programs; and a host of other unobtrusive measures.

The data was analyzed in two phases. First the pre-post test scores were compared and analyzed through appropriate tests of significance (largely t-tests). These data were then reanalyzed via regression, analysis of variance, and other means to try to determine the ways and degree in which different program forms and formats affect student growth. In all cases, the data gathered through paper and pencil tests was triangulated through information gathered by other means and from other observers.

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*Results are given in Chapter Four.

In brief summary, the study sought to answer two questions:

1. To what extent and in what ways do experiential programs have an effect on the social, psychological, and intellectual development of adolescents?

2. To what extent and in what ways do different forms and formats of experiential programs have a differentiated effect on such development?

In plain English the questions were "Do experiential programs work?" and "To the extent they do, what accounts for it?"

In the following chapters the programs are described more fully, the methodology explained, the findings reported, and implications are suggested.

Chapter Two

PROGRAMS

An important aim of the study was to include schools that would represent a variety of program orientations (service, career internship, community study, outdoor adventure); of school types (independent, parochial, public); geographic area and type of community (urban, suburban, small town); of program structure (seminar--non-seminar, short and intermittent experience to long-term and intensive); and of student populations (poverty level to affluent, low to high grade point average).

Within these general guidelines, the chief criteria for inclusion in the study were that the program have a reputation for excellence, have been in operation for at least four years, that it be an integral part of its schools academic program, and that there be a local interest in being included. Potential participants were identified out of the project directors' working knowledge of experiential programs, nominations from the sponsoring organizations (NAIS, NASSP, NCEA), and recommendations from the National Commission on Resources for Youth, Inc., and from the National Center for Service Learning. Of the schools finally contacted, only three chose not to be included. Of those who were included, three were unable to complete the testing (one independent, one parochial, and one public). The latter were replaced by schools which applied on their own initiative and met the criteria for inclusion.

The final roster of programs were as representative as might have been hoped for. The chief imbalances were an underrepresentation of schools from the West and South and of programs which had outdoor adventure (a la Outward Bound) as an exclusive program focus. By all other criteria the programs were relatively balanced.

It must be noted, and cannot be too strongly emphasized, that any success achieved by this project was in no small measure due to the efforts of the individual program directors and administrators. They were responsible for identifying the key outcomes of experiential learning, defining the focus of the study, administering the tests themselves, and helping to interpret the data. Without such capable, willing, and energetic people there is no possible way that a study of this scope could have been carried out short of a twenty-fold increase in staff and budgets-and then it's doubtful. More will be said on this subject in Chapter Six.

PROGRAM TYPES

The programs included in the study were divided according to the kind of experience featured in it. The categories are described below.

Community Service Programs.

Students in these programs were involved in giving direct community service. In most cases their efforts were channeled through local human service organizations and the students served as volunteers in such places as nursing homes, day care centers, elementary schools, hospitals, counseling centers, and institutions for mentally, physically, or emotionally handicapped people.

Outdoor Adventure Programs.

Students in these programs were involved primarily (some exclusively) in outdoor adventure activities. The specific activities included wilderness trips, rock climbing, camping, living in a rural setting, archeological excavation, and the like. The programs were school-sponsored and faculty-led rather than directed by outside agencies specializing in these areas.

Career Internships.

Students in these programs served as interns in business, government, arts, education, and social agencies. The major purpose of these experiences was to get an inside view of an organization and occupation, and to test ones interest in and competence for it.

Community Study Programs.

Students in these programs studied their communities first-hand by conducting surveys and interviews, and through direct observation. Also included in this category were social and political action projects which focused on efforts to influence (and inform others on) public decision-making.

Comparison Groups.

There was at least one comparison group within each of the above categories. The groups were not controls to the category as a whole but to a specific program within it. The students were in regular classroom (non-experiential) programs in the same school as the group to which they were controls, and were comparable as to age, sex, grade, socio-economic status, and grade-point-average. These groups are labeled as comparisons rather than controls because it was not possible (or desirable) to insist on random selections of students (see Chapter Three).

Program Descriptions

The programs included in the study are described briefly below, and grouped according to category.

Community Service Programs. (10 programs)

A) Community Service Programs, Bishop Ward High School, Kansas City, Kansas (N=67). Bishop Ward is a Catholic, coeducational parochial school, and the Community Service Program is a senior semester elective offered within the religion department. Students work with the elderly, in day care centers, tutor elementary students, and the like. Prior to service assignments, students are given an intensive seven day workshop acquainting them with the kinds of problems they will be facing in their placements. For the rest of the semester they spend two or three class periods each week in their field placement and one period every other week in a seminar on their experiences. Most of the students come from middle or lower-middle income working class families.

B) Peer Counseling, Work Opportunity Center, Minneapolis, Minnesota (N=16)

This program is part of a CETA demonstration project combining academic study and practical work experience related to the study. It aims at teaching essential knowledge and skills, raising career aspirations, and providing needed pay to low-income students. Participants study human behavior, are trained in counseling skills, and then apply these through working as peer counselors in a center for runaway youth. Each student spends about five hours each week in the classroom (which includes counseling each other as well as more typical academic work) and 10 to 15 hours at the runaway house. Nearly all the students in the program are from families below the poverty level and receive credit for the classroom work and pay for their counseling work at the runaway house.

C) Social Studies Lab, Eisenhower High School, Hopkins, Minnesota (N=41)

Students in the regular 12th grade social studies classes may elect to perform community service in lieu of the book report and/or research paper requirement of the course. There is no formal reflective component in this program, though some of the students do keep journals and/or write a summary paper on their experiences. The typical involvement for these students is from two to four hours, one day a week, in settings similar to those described below for the Community Involvement Program. One major difference is that with less time on the site they seldom can be assigned equal responsibility with the students in the more intensive program.

D) Community Involvement Program, Eisenhower High School, Hopkins, Minnesota (N=65)

Students in this program are involved as volunteers in elementary schools, day care centers, nursing homes, centers of retarded and/or handicapped children, and in other social service agencies. The program is an option within the school's 12th grade social studies department and carries full academic credit. The students are scheduled into a two-hour block during which they work in the community four days a week and spend one in class. In the class they discuss their field experiences, pursue a curriculum in psychology, and work on interpersonal helping skills. The school is located in an older, working class community surrounded by "bedroom suburbs" of professional families. Most of the students in the program, like those in the school as a whole, are from working class families.

E) Community Awareness Program, Mayo High School, Rochester, Minnesota (N=27)

The Community Awareness Program (CAP) is offered by the social studies department and is open to both 11th and 12th grade students on a first come, first served basis. CAP is scheduled in a 2-hour block within the school day. Students usually spend 3 days a week in community settings such as day care centers, nursing homes, senior citizens programs, and the Rochester State Hospital. Two days are devoted to class seminars that include readings, field trips, discussions, role playing, etc. related to the field placements. Rochester is a community of around 50,000 people located in southern Minnesota. Students are from professional, working, and rural families."

F) Community Experience Program, Ridgewood High School, Norridge, Illinois (N=33)

In this program, students in grades 10-12 do volunteer-service either in an out of school assignment in day care centers, homes for senior citizens, elementary and junior high, schools for retarded and/or physically handicapped, hospitals, health faciltites, youth service programs and parks; or special projects such as food drives, a law enforcement project, animal care training program, etc. Students' assignments vary from 3 to 10 hours per week and last for a semester or a full year. Students are required to keep a journal of their experience and attend a seminar dealing with motivation, problem solving, personal growth and communication skills.

Ridgewood is a public suburban school outside of Chicago, which serves a middle-class population.

G & H) Community Commitment Program, Ninth and Tenth Graders (N=21), Eleventh and Twelfth (N=12), Duluth Cathedral High School, Duluth, Minnesota.

Approximately half the student body of Cathedral High School is involved in its Community Commitment Program. One day each week, participating students are released from academic classes from two to seven hours to work in a wide variety of community service agencies while those who remain in school focus on make-up work, special projects, small group work, etc. A student's commitment is for one semester, although most elect to be in the program for two semesters and to work in two different areas of service. Older students work independently, while younger students have a reflective seminar each week. Students also sponsor special days in which groups (elderly, retarded) are invited to the school for a day, and the program also sponsors special summer projects. Duluth Cathedral is an interdenominational parochial school whose student body reflects the full range of religious faiths and socio-economic backgrounds.

I & J) Experiential Education Course, Middle School (N=111) and 12th grade (N=7), Francis W. Parker School, Chicago, Illinois.

Middle School students (grades 7-8) and 12th graders were involved in social service activities.

The 12th grade students were in placements in social agencies, hospitals, day care centers, elementary schools, civil liberties union, for 12 weeks from two to five hours per week. A weekly seminar--one hour per week--included discussions of student observations and lectures by professional and various human service agencies and community groups. The 7th and 8th graders were enrolled in a three week course which emphasized both theory and participation in the community. Students spend 6-10 hours per week in a volunteer placement in a community agency (similar to those filled by 12th graders) and one hour in the classroom to share experiences and explore social issues with guest speakers.

The school is an independent, college preparatory school, K-12, which serves the children of upper-middle, upper class families.

Outdoor Adventure Programs.

A) Spring Outdoor Adventure Program, Parker Collegiate Institute, Brooklyn Heights, New York (N=65). Each year, during the month of May, students at Parker Collegiate may choose from a wide variety of full time, month long special experiences. Among outdoor offerings students may choose an extended camping experience, or a wilderness expedition, or may participate in an archeological expedition. The experiences are full time, largely group activities. They feature on-going informal discussion and reflections rather than formal classes or seminars. Most of the students come from upper-middle or higher income families.

B & C) Senior Semester Program, Mitchell High School, Colorado Springs Colorado (Fall, N=25; Spring, N=37)

Senior Semester is a full time, 18 week program open to students in the 12th grade. Following a three day retreat and a general orientation, each student selects four different learning blocks from among the several offered. The blocks last three to four weeks each and include experiences in outdoor adventure, living in a rural setting, firsthand study of the criminal justice system, internships in community organizations, creative projects, and several others. Each option is intensive (full time) and experiential. There are few formal seminars, but most options are group efforts including ongoing discussions with the instructors and the other participants. Most of the students are from middle and upper-middle income families.

D) Spring Outdoor Adventure (N=25) and Spring Community Study (N=35, St. Benedict's Preparatory School, Newark, New Jersey

All students at St. Benedict's Preparatory School participated in these five week, full time intensive investigations of a single topic or interest. Designed to be as different as possible from the traditional classroom approach, the projects rely on first hand experience, student leadership and responsibility, group interaction and personal-risk-taking. All 9th graders participate in an outdoor experience--either backpacking on the Appalachian Trail, or a bicycle trip following George Washington's route through New Jersey. The 10th and 11th graders choose one of the following community study options--making a film; observation of the court system culminating with a mock trial; producing a children's play and touring it around the city; investigation of urban problems through interviews and site visits. Each are group projects with ongoing, informal discussion and reflectiion. Students are evaluated through written or oral tests, practical demonstrations of their skills, and a group presentation to the rest of the school during the final week.

St. Benedicts is an independent college preparatory school for boys in grades 9-12. Approximately 3/4 of the students are black with 60% coming from the city of Newark.

Career Internships.

A) Community Internship Program, Beverly Hills High School, Beverly Hills, California (N=33)

This program operates out of the school's Applied Education Center. Students in the 11th and 12th grades may serve as interns (for credit but no pay) in stockbrokers' offices, law offices, medical centers, TV studios, retail stores, hospitals, government agencies, social service agencies and in many other settings. The internships are applied for and performed on an individual basis and typically run two or three hours daily for one school term (about 16 weeks). There is no accompanying class or seminar, though some students do write reports on their work and/or have informal and occasional discussions with the program coordinator. As might be expected in Beverly Hills, most of the students come from highly affluent families.

B) Medical Careers Program, Central High School, Minneapolis, Minnesota (N=12)

This program is deliberately designed to develop in inner city youth an interest in health professions and the background and confidence needed to pursue them as careers. The program operates for half the school day for one trimester (12 weeks) and is repeated three times each year. For half of each day the students (who are in the 11th grade) intern in a variety of medical departments in a large Veterans' Hospital. Four half-days each week are spent studying biology at a nearby community college, and the fifth in a classroom experience featuring discussions with minority health professionals. The students, who receive credit but no pay for the experience, come largely from low-income families.

C) Spring Career Internships, Parker Collegiate Institute, Brooklyn Heights, New York (N=26). Career internships were a second option within the previously mentioned spring program at Parker Collegiate. Students served as unpaid interns in a wide variety of businesses, public agencies, and governmental offices in New York City. These were intensive, high level, full-time experiences and were done, for the most part, on an individual basis without a group seminar or formal reflective component.

D) Community Construction Program, St. Paul Public Schools, St. Paul, Minnesota (N=24). The construction Center was one of several programs within the Students Serving Students project which operated in St. Paul in cooperation with the school system and with funds from the Concentrated Employment Training Act (CETA). The students came from several city high schools to a center where they learned the basic skill of construction. These skills were then applied through contracted services performed within and outside the school systems- from partitioning walls to building an entire garage. Students received school credit for the training and pay for its application in real projects. They could be in the program for a full or half day for two 11 week trimesters. All were from low income families.

E, F & G) Community Involvement Personal Educational Development (CIPED), South Brunswick High School, Monmouth Jct., New Jersey (10th grade), N=58, 10th grade plus career education, N=36; 12th grade, N=39. This is a program involving all high school students in grades 9 through 12 (approximately 1,000). It was created to supplement and enrich classroom instruction, as well as provide totally new experiences through direct involvement in the community. The program is designed so that each student spends a minimum of four hours one day a week at a selected activity. The activities are grouped into six major areas: outdoor education, teacher aide, government, independent projects, occupational exploration, and social services. For the most part students do not have a formal seminar related to this involvement experience but do have some written assignments and have individual discussions with their school and field supervisors.

The school population is not easily typed, though most students are from professional families with smaller numbers from working class and rural backgrounds.

Despite the variety of experiences available, the program has been grouped with career programs for this study as the largest number of placements can be considered career-related and, for one subgroup, they were accompanied by a career seminar. For some purposes all CIPED students are combined in the study, and for others they are separated into 12th graders (with 3 years of previous CIPED experience) and 10th graders, and 10th graders with accompanying career seminar.

H) Community Based Learning Programs, Allegheny Intermediate Unit, Pittsburgh, Pennsylvania (N=16).

Seniors in several suburban high schools in Pittsburgh (Upper St. Clair, Keystone Oaks and North Hills) were engaged in full-time career internships for a semester. The major purpose of the program was to enable students to explore, in depth, a vocational or career interest, which they may follow upon completion of their education. Students pursued a wide variety of interests such as theatre, horticulture, merchandising, secretarial, journalism, physical therapy, medicine, psychology, television, hotel management, etc. Students attend weekly seminars, and keep a journal as a way to continuously analyze and assess their experience.

The participating schools were public high schools in suburban Pittsburgh serving a lower to middle class population.

Community Study.

A) Consumer Action Service, St. Paul Public Schools, St. Paul, Minnesota (N=27)

This program is part of a larger project entitled Students Serving Students which is funded as part of the Concentrated Employment Training Act (CETA). The students come from several different schools to a particular center for half of each school day. There they study a variety of consumer issues, attempt to resolve their own and others' consumer problems, and, as a final project, produce a consumer guide. Several students also have internships with agencies involved with consumer issues. Instruction in basic academic skills and seminars on a variety of issues are central to the program. The students are mostly in the 10th or 11th grade and nearly all come from low-income families.

B) Community Participation Program, Kirkwood High School, Kirkwood, Missouri (N=51).

This a 9th grade elective program in which students take four academic subjects in a block: English, mathematics, citizenship and science. During the first and third quarters students take all classes in the school. In the remaining weeks students may opt to participate in the community for a two-hour period twice weekly. Students do volunteer service, are involved in consumer and ecological projects, and participate in other political activities. They also take numerous field trips to the courts, government offices, and to sicentific institutions. Students also produce some product from their project, and discuss their project thoroughly with their instructors. Kirkwood is a suburb of St. Louis, Missouri, and is populated largely by upper-middle income families.

C) Consumer Action Course, Southwest Secondary School, Minneapolis, Minnesota (N=34)

This elective course open to students in grade 10-11 consisted of a two hour English/Social Studies course in which they interned two times a week in government and business to learn first-hand how these organizations deal with consumer problems. Students also ran an "action line" in which they attempted to solve consumer problems of other students, neighbors, parents, etc. The students had weekly seminars in which they learned about consumer law, bureaucratic organization, verbal and written communication, political process, etc.

Southwest is an urban school in Minneapolis, Minnesota serving primarily a middle and upper middle class population.

D) Learning Unlimited, North Central High School, Indianapolis, Indiana (N=94)

This program, open to 10-12 grade students, offer full or part-time alternative courses and experiences to approximately 300 students per year. There are several options available--most students participated in individual internships in which they pursued specialized interests in the arts, human services, government or business. A small number of students were involved in extended trips. Another group participated in the government program, which consisted of classroom study and a community project such as interns with government officials at the state and national level, working on political campaigns, or investigating social and political issues. This is a suburban public school and most students come from middle and upper-middle class income families.

E) Spring Community Study Program, St. Benedicts Preparatory School, Newark, New Jersey (N=35)

See p. 11 under Spring Outdoor Adventure, St. Benedicts, for a description of the community study program.

Comparison Groups.

As indicated earlier there was at least one comparison group for each category of programs. These groups were not used as comparisons to the entire category but to a particular program within it to which they were matched by way of being from the same school population, age and grade, grade-point-average, and socio-economic status. This specific difference was that they were not engaged in an off-campus, experiential program during the pre-post test period.

Students from Comparison Group 1, Hopkins, Minnesota (N=89) were enrolled in the regular 12th grade social studies course. Comparison Group 2 was Colorado Springs, Colorado students from Mitchell High School (N=39) who were enrolled in a 12th grade psychology class. Students from Comparison Group 3, St. Benedicts, Newark, New Jersey (N=49) were comparisons in that they were a random sample of students at St. Benedicts who took the post test before the Spring experiential program began rather than after it. Students from Comparison Group 4 Packer Collegiate, Brooklyn, New York (N=58) were participants in the Spring program who chose in-school enrichment experience (language study, painting, dance, diplomacy seminar, etc.) instead of off-campus experiences. Students from Comparison Group 5, Kirkwood, Missouri (N=18) were ninth grade students who did not participate in off-campus experiences. Students from Comparison Group 6, North Central, Indianapolis Indiana (N=85) were selected from 10th-12th grade English classes in the regular school program to match those in the alternative school.

In the analytical table each of these programs will be assigned a shorter title as explained in Chapter Four. First, however, the methodology of the study will be summarized in Chapter Three.

Chapter Three

METHODOLOGY OF STUDY

This chapter describes the steps taken in designing and carrying out this study: 1) research questions were identified; 2) research design(s) determined; 3) assessment procedures selected and instruments identified or developed; 4) appropriate means of data analysis were specified.

The Research Question

A central operating principle of the Project was that it be oriented toward practitioners of experiential education, that its findings be of practical as well as scholarly use. Throughout the Project, practitioners were significantly involved in determining the research questions, administering test instruments and keeping anecdotal records, developing questionnaires, reacting to proposed designs and instrumentation, and interpreting the results. It was our belief that such involvement would enhance both the practical and scholarly value of the research effort.

Thus the first step of the research process was to gather a "Panel of Practitioners." In January of 1978, they (25 administrators and program directors) met to identify the key outcomes of experiential programs. Their conclusions represent an important study in itself, being a report of "concerned observers" looking critically, if not disinterestedly, at experiential education.

Among the vast array of observed effects were 24 which appeared with amazing regularity. Together, they comprise an imposing list of outcomes which schools everywhere hope to achieve, but less often do (or even dare to claim): improved self-esteem, learning responsibility, learning to solve real-life problems, etc. (see Table 3:1). Given the current level of pessimism in American education, it is encouraging, even startling, to see such confidence about the effects which at least one educational practice seems to be having.

This original survey set the stage for the next and more critical step in the evaluation process. Believing that the consumers of a "product" are usually more reliable judges of its value than its producers or salespersons, we presented, in the spring of 1978, this list of observed effects to all the students in each of the programs. The students were informed that the list represented what some people had said might be effects of experiential programs and were asked: "Which, if any, of these things have you personally learned or gained from the activities in your own experiential program?"

The researchers knew from previous studies and their own experience that students' perceptions of the purposes of a course are often considerably different from, and their evaluations less effusive than, those of their teachers. Therefore, they expected not more than a 50 percent level of agreement between teachers and students on the effects of the programs. In fact, however, only one item, "to become a more effective consumer," (46%) failed to meet the criteria, but it was a deliberate emphasis in only two of the programs surveyed.

More than half (14) of the items achieved an average agreement level of over 80 percent across all programs. Each of the other items, such as learning about community problems and resources, learning about careers, etc., received 80 to 100 percent agreement in those programs where they were a deliberate emphasis. Apparently with good reason, the participants in these experiential programs think they are pursuing something worthwhile in education.

Not only was there substantial agreement between students and teachers about what is learned in experience-based programs, but community people who supervised the students, ranging from free clinic counselors to television network executives, also reported that they observed student progress toward these outcomes. At one school (Beverly Hills High School), the students' supervisors were asked to respond to the same questionnaire as the students. The only difference between the student and supervisor rating was that the latter ratings were more positive, with a much higher incidence of "strongly agree" appearing in their responses. The high levels of agreement elicited by these surveys made it reasonable to conclude that the items did represent the major hypothesized effects of experiential programs -- as seen by those in the best possible position(s) to know them.

TABLE 3:1
WHAT STUDENTS LEARN IN EXPERIENTIAL LEARNING
COMPOSITE PROFILE OF 20 EXPERIENTIAL PROGRAMS (N=4000)

ITEM (in rank order)		PERCENTAGE OF RESPONSES		
		Agree*	Disagree*	Don't Know
1.	Concern for fellow human beings	93%	4%	3%
2.	Ability to get things done and to work smoothly with others	93	4	3
3.	Realistic attitudes toward other people such as the elderly, handicapped, or government officials	88	4	8
4.	Self-motivation to learn, participate, achieve	88	7	5
5.	Self-concept (sense of confidence, sense of competence, self-awareness)	88	7	5
6.	Responsibility to the group or class	86	3	11
7.	Risk-taking--openness to new experiences	86	7	8
8.	Sense of usefulness in relation to the community	86	8	6
9.	Problem-solving	86	9	5
10.	Risk-taking--being assertive and independent	86	9	5
11.	Accept consequences of my own actions	85	9	6
12.	Gathering and analyzing information, observation, reflecting on experience	84	8	7
13.	Knowledge of community organizations	82	7	11

TABLE 3:1 (Continued)
WHAT STUDENTS LEARN IN EXPERIENTIAL LEARNING
COMPOSITE PROFILE OF 20 EXPERIENTIAL PROGRAMS (N=3,500)

ITEM (in rank order)	PERCENTAGE OF RESPONSES		
	Agree*	Disagree*	Don't Know
14. Responsibility for my own life	80%	10%	9%
15. Awareness of community problems	78	13	9
16. Assume new, important tasks in community and school	78	14	8
17. Communication skills (listening, speaking, presenting ideas through variety of media)	77	11	7
18. Awareness of community resources	71	13	16
19. Realistic ideas about the world of work	71	18	11
20. Learning about a variety of careers	70	22	8
21. Use of leisure time	60	26	14
22. Narrowing career choices	54	34	12
23. To become an effective parent	52	29	19
24. To become an effective consumer	46	32	22

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*Agree and strongly agree are combined; disagree and strongly disagree are combined.

With the key issues thus identified, the next task was to translate what were essentially self reports into research questions suitable for more rigorous examination. The list was trimmed to 20 items by including only those on which there was at least a 70% level of agreement between students and program directors. These 20 items were then categorized according to their general contribution to social development (items 1, 2, 3, 6, 8, 16, 19, 20), psychological development (items 4, 5, 7, 10, 11, 14), and intellectual development (items 9, 12, 13, 15, 17, 18). Within each of these areas specific issues were identified which were central to the category and amenable to empirical investigation. The questions which were finally chosen are listed below by category. For social development it was asked: to what extent do experiential programs have a positive impact on students' levels of personal and social responsibility, on their attitudes toward others, on their attitudes toward active participation in the community, and on their involvement in career planning and exploration. For psychological development it was asked: to what extent do experiential programs have an effect on students' general self esteem, on their self esteem in social situations, and on their level of moral reasoning. For intellectual development it was asked: to what extent do experiential programs have a positive effect on students' knowledge of community issues and resources, and on their ability to analyze and solve problems. Each of these outcomes was operationally defined as student scores on the instruments described later in this chapter. They also served as the foci of staff observations and anecdotal record-keeping.

The above series of questions represented, however, only half of the overall study. If the concept of experiential education connoted only one specific treatment, the investigation of these questions would have been sufficient. But since experiential education can take several forms and be organized in different ways, a second dimension was needed. That was to examine how experiential programs of differing types and structures affected the social, psychological, and intellectual growth of students. The specific program features selected for analysis were: 1) type of experience, 2) length and intensity of experience, 3) existence of a reflective component, 4) nature of the reflective component, and 5) characteristics of each student's individual experience. Demographic data on each student was also collected and analyzed. For example, do short-term experiences of three to four weeks show any effect on attitudinal change? Does the intensity of the program -- two hours versus ten hours per week -- affect student outcomes? Are some types of programs, e.g., community service, more likely to promote a sense of social responsibility or interest in community participation? To what extent do the characteristics of each student's individual experience affect the results?

Research Design

Among the strengths of this research effort are that it was conducted in natural settings, included a wide variety of programs, used multiple measures, and involved a large and heterogeneous sample of student subjects. Such a combination of features was desired in order to assess the effects of so broad a practice as experiential education and to draw comparisons between its different forms. However, the attainment of these advantages required the acceptance of certain limitations. Most notably, it was not possible to use a true experimental design with random assignment of students to experimental and control groups. In each setting, student participation was voluntary -- as is almost universally the case with experiential programs. Furthermore, it was not possible (or desirable) to demand more from the program directors than what was already required to collect such extensive data from their own students. Also, it was not possible to randomize by social and economic status which prevented an exact comparison of program and SES interaction.

The approach taken, therefore, was to apply the strongest design that was obtainable, given the above restraints, in each of the settings. The result was that two quasi-experimental designs were employed, the non-equivalent comparison group design (Campbell and Stanley, 1963, p. 47), and the one-group pretest - posttest design (pp. 7-12), according to data availability.

Non-equivalent Comparison Group Design

In six schools, Mitchell High School, Eisenhower High School, St. Benedict's, North Central High School, Kirkwood High School, and Packer Collegiate Institute, this relatively strong design was possible. At Mitchell, North Central and Kirkwood high schools, the design was applied in its most traditional form as diagrammed below. In the diagram, 0 represents observations and X represents the experimental treatment.

Experimental	0	X	0
Comparison	0		0

The Mitchell comparison group was a 12th grade psychology class made up of students who were not involved in any experiential program. At Kirkwood, the comparison group was made up of students enrolled in the same 9th grade block program as the experimentals but who were not involved in any off-campus experiences during the course of the program. At North Central the comparison group was made up of students in the traditional academic program as opposed to the more experiential alternative school program. In each setting the experimental and comparison groups were highly similar in age, grade, sex, and socio-economic status.

At both Eisenhower and Packer Collegiate more than one experimental treatment was involved, and for special purposes it was possible and preferable to make three-way comparisons as follows:

Experimental$_1$	0	X_1	0
Experimental$_2$	0	X_2	0
Comparison	0		0

However, in order to merge the findings from these schools with those of the others, the direct comparisons made (and reported) were between the program most fully meeting the criteria for an experiential program (Experimental$_1$) and the control group.

At Eisenhower High School, Experimental$_1$ was the group of 12th grade social studies students involved in the intensive, two-hour per day community involvement course. Experimental$_2$ was made up of an equal number of 12th grade students in the social studies lab program. The comparison group was composed of 12th grade social studies students who did not participate in any part of the school's community involvement program.

At Packer Collegiate Institute, Experimental$_1$ was composed of students who were engaged in outdoor adventure experiences. Experimental$_2$ was composed of students who were involved in career internships in various New York City locations. Students in the comparison group were pursuing in-school enrichment activities. All of these activities occurred during May of 1979.

At St. Benedict's a "patched-up" version of this design was used due to peculiar circumstances at that site. The key experience there is an off-campus program in the month of May. All students were pre-tested at the beginning of the year, one sample from this group was post-tested just prior to the May program and the rest at the conclusion of the program. This procedure provided some basis for comparison but, because it was somewhat improvisational, it was used as a check on rather than as a basis for trial comparison.

The non-equivalent control group design has several strengths which made it peculiarly appropriate for this study. The most obvious is its applicability to research in the natural setting of schools where more rigorous designs are intrusive when feasible at all. Furthermore, it is a strong design in terms of internal validity since it controls for the variables of history, maturation, testing, instrumentation, statistical regression, selection, and mortality (ibid., p. 40). In this study the design was further strengthened in that the experimental and comparison groups were drawn from the same school populations, and from the same age and grade groupings. Subsequent analysis revealed that within each school the groups were highly similar in grade point average, socioeconomic status, and in their pretest scores on the test instruments.

The major limitation of this design, one affecting both internal and external validity, is the possibility of an interaction of selection and maturity and the treatment itself. That the experimental subjects formed self-selected groups cannot be ignored. In this case the threat to validity was somewhat diminished by three countervailing factors. First, pre-treatment comparisons showed the experimental and comparison groups to be highly similar in all characteristics except that of selection. Second, the self-selection process is a nearly universal characteristic of experiential programs, so any deviation from this practice would actually weaken generalizations to other non-voluntary programs. Third, and related to the above, is that the intent of this study was not so much to establish the superiority of experiential programs over non-experiential ones as it was to test results against claims and to compare different forms of the practice to each other.

One-Group Pretest -- Posttest Design

In the other locations, the best obtainable design was the one-group pre-test -- posttest design diagrammed as follows:

$$0 \quad X \quad 0$$

This design has several obvious limitations which require the researcher to be parsimonious in its use and cautious in its interpretation. In the sites where it was employed, it was considered appropriate for several reasons: it was critical to this study to include a variety of programs, and this necessitated including sites where no other design was feasible; the use of a less complex design in some sites kept the data base and analysis within manageable limits; and the major use of the results thus obtained was for comparison with other forms of experiential programs and not to more traditional classes. Thus, the results were applicable to the important research question of the degree to which the participants in these experiential programs achieved the goals which were hypothesized for them. And, finally, the availability of a stronger design in other sites in the same study provided additional and firmer ground for interpreting the data obtained through this design.

Assessment Procedures and Instruments

The assessment procedures of this study were based on a formative evaluation model designed to examine not only the impact of the programs, but the differential effects of several varieties of them. Consistent with this approach, a variety of data-gathering mechanisms were used: formal tests, both standardized and author-designed; and informal measures, including student, parent, and supervisor questionnaires, interviews, and written records. The assessment devices are described below, and each is reprinted fully in Appendix A. The formal measures are divided according to the areas of development to which they were applied.

Psychological Development

The Defining Issues Test. The Defining Issues Test (DIT) was used in one school (Eisenhower High School) where it was administered to the two experimental groups and to the comparison group. The DIT is related to Kohlberg's measure of moral development with a correlation of r=.68 existing between them (Rest, 1974a). The instrument's developer bases his assessment of moral level on comprehension, recognition, and preference for moral considerations and not on spontaneous production of moral judgments.

The DIT has been variously used as a measure of moral reasoning, of psychological maturity, and cognitive development, with moderate to high correlations reported in each of these areas (Glassberg, 1977). It was used in this study primarily as a psychological measure and as a standard against which two study-designed measures (Social and Personal Responsibility and Problem Solving) could be compared.

The Rosenberg Self Esteem Scale. This scale measures the self acceptance aspect of self esteem. Originally developed for use with high school students, it was designed specifically with brevity and ease of administration in mind (Robinson and Shaver, 1973). The scale consists of ten items answered on a four point scale from strongly agree to strongly disagree.

Self esteem, as defined by measures such as Rosenberg's is a highly stable attribute not particularly amenable to change through a short term intervention. In this study it was employed only partially as a measure of change. Of equal value was its use as an individual assessment tool facilitating the investigation of questions such as whether students with higher self esteem scores are more likely to risk participation in an experiential course and/or are more likely to be satisfied with and to succeed in it. Its wide use with high school students, high acceptance, and ease of administration made it especially useful for this study.

Janis - Field Feelings of Inadequacy Scale. This scale was originally designed to measure feelings of inadequacy in studies relating to a person's persuasibility. Like the Rosenberg Scale, it is brief, has been used extensively in research, and has achieved wide acceptance as a measure of self esteem (Robinson and Shaver, 1973). It differs from the Rosenberg scale and similar measures by its focus on self esteem in actual social situations rather than on more generalized feelings about the self. The difference can readily be seen by comparing items from the two scales. A typical Rosenberg item reads "On the whole, I am satisfied with myself," as contrasted to the typically more situation-specific and socially-oriented items of the Janis-Field Scale such as "When you speak in a class discussion, how often do you feel sure of yourself?"

As indicated above, the Janis-Field Scale is not only widely used, but is commonly used as a basis for study-specific scales and is available in a shortened version. For this study, a ten-item scale was used. The items chosen were the 10 with the highest inter-item correlation from the 20-item scale (Skolnick and Shaw, 1970). Each of these items represent situations which are common to high school students and which they could reasonably be expected to encounter in a community-based experiential program. Because of its focus on perceived performance of self (vs. general assessment of worth), it was expected that this scale would be more sensitive to changes in the self-perceptions of participants than the Rosenberg Scale.

Social Development

Semantic Differential. To Gordon Allport (1935), that an attitude is learned or changed through experience was so fundamental a fact that it formed part of his definition of what an attitude is. Similarly, to the adults and students surveyed on the outcomes of experiential programs, nothing was so clear as that participation in community experiences affected attitudes toward others. It was thus imperative that some measure of attitude change be included in the study.

The semantic differential is a method of observing and measuring the psychological meaning of concepts. It is highly regarded as a tool for measuring people's feelings toward an object or concept, and is particularly useful in situations where people are likely to have emotional reactions to a topic but not well thought out opinions (Henerson, et al, 1978). The scale consists of a series of adjectives and their antonyms listed on opposite sides of the page with seven attitude positions in between. At the top of the page, the attitude object is named as the heading. The attitude object may be stated as a word, a phrase, or even a picture. For example:

Zucchini

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
bad	_____	_____	_____	_____	_____	_____	_____	good
beautiful	_____	_____	_____	_____	_____	_____	_____	ugly
friendly	_____	_____	_____	_____	_____	_____	_____	unfriendly

Three semantic differential scales were employed in this study. In one the object-word was "adult." A common charge by critics of current socialization practices is that adolescents are too separated from association with adults. It thus seemed important to see what this term connoted to young people and what effect a collegial relationship with adults might have on students' attitudes toward them. A second object-term was the phrase "being active in the community." It was hypothesized that participation in the community would affect students' understanding of the idea and their propensity to act on it. The third was left open-ended, and students were instructed to use an object-word representing the institution or kind of person with which they would be in primary contact in the field experience. Possible choices included: old people, little kids, junior high kids, mentally retarded persons, physically handicapped people, people in government, people in business, poor people, hospitals, police, the courts, and teachers. They could also select a term not on the list.

Career Exploration Scale. In the preliminary survey of program directors, there was nearly unanimous agreement that experiential programs help students learn about (and sometimes even to choose) careers. Seventy percent of the students across all programs agreed, with agreement reaching over 90% in those programs where career planning and involvement were intentional program aims. With this level of agreement, and given the current emphasis on career education, it seemed important to empirically test these self-reports of impact on career planning.

The Career Exploration Scale was adapted (with permission) from the Student Attitude Questionnaire developed by the Educational Work Program of the Northwest Regional Laboratory (NWRL), Portland, Oregon (NWRL, 1978). This 25-item scale was developed as a tool for evaluating Experience-Based Career Education Programs, and 16 items were selected from it. Rather than emphasizing self-reports about attitudes toward careers and work, this questionnaire focuses on actual behaviors in planning and exploring careers. It asks students to report "how frequently" in the past 12 months they have done such things as: "tried out activities related to the job or career field," or "thought about how well the job or career field matches your interests and abilities." The questionnaire was viewed as a more rigorous and appropriate assessment of the relation between experiential programs and career development than more traditional measures.

The responses to the Scale are most conveniently reported as a single score calculated by assigning the possible responses ("never" through "more than once a month") numbers 1 through 5. For this study the scale was also broken down into two subscales labeled Action ("did," "observed") and Information (e.g., "learned about").

Social and Personal Responsibility Scale. Of all the reported outcomes of experiential education programs, the ones most commonly cited by program directors were several clustering around the concept of responsibility. They reported that students learned to be on time, to fulfill obligations, to accept the consequences of actions, to take on demanding tasks, and the like. Some students may have learned through success and others by painful failure, but in either case it was seen to be a useful lesson learned. This strong emphasis on responsibility paralleled the theoretical case for experiential learning and, as importantly, was strongly reaffirmed by the students themselves. The teaching and learning of responsibility has long been a prominent theme in American education, but has seemed to hold a special significance to the proponents of experiential education.

Despite the prominence which the concept of responsibility has had in the rhetoric of American schooling and adolescent socialization, relatively little is known empirically about how responsibility develops--or even what the concept exactly means. Moreover, there are few tools for measuring growth in these areas. The most commonly used instrument is the Social Responsibility Scale (SRS) by Berkowitz and Daniels (1964), which was based on work by Dale Harris (1957). The SRS has been widely used in research, but was considered inappropriate for the present study on these counts: 1) its tendency, even intent, to elicit what the subjects consider to be socially desirable responses (Stone, 1965; Berkowitz, 1965); 2) its focus on attitudes only; and 3) its heavy emphasis on general social referrents of responsibility.

A new responsibility scale was created for this study and named the Social and Personal Responsibility Scale (SPRS). While a few items on general social responsibility could be adapted from the aforementioned scales, it was necessary to alter the format of the questionnaire and to develop completely new items for other critical dimensions of responsibility. The intent was to create a scale that would be more encompassing and, at the same time, be related more directly to the experiences of students in community-based educational programs. Because this test instrument was author-designed for this study, its rationale and format is rather fully described below.

Responsibility is a multi-faceted concept, which includes three major dimensions--attitudes, competence, and efficacy. The SPRS is built on the assumption that a person will act in a responsible manner when the following conditions are present. First, one must feel a sense of responsibility or have a responsible attitude toward others in the society. Secondly, one must have competence to act upon this feeling of concern for others. Finally, one must have a sense of efficacy, which allows one to believe that taking action and feeling concern can make a difference.

The subscales of the SPRS assess the extent to which students 1) have responsible attitudes; 2) feel competent to act responsibly; 3) feel a sense of efficacy to take responsibility; and 4) perform responsible acts.

1) Attitudes Toward Being Responsible

Attitudes about responsibility are further subdivided into social welfare and duty. The social welfare subscale focuses on the extent to which one feels concerned about problems and issues in the wider society. For example, the following is a social welfare attitude item: "Some teenagers are interested in doing something about problems in the community, but other teenagers are not that interested in working on problems in the community."

The duty subscale focuses on the extent to which one feels bound to personally meet social obligations, and includes items such as: "Some teenagers feel bad when they let people down who depend on them, but other teenagers don't let it bother them that much;" and "Some teenagers feel obligated to carry out tasks assigned to them by the group, but other teenagers don't feel that bound by group decisions."

2. Competence to Take Responsibility

While a person may have a positive attitude toward others, he/she may still not be able to act in a responsible manner if he/she has not the competence or skill to do so. For example, if one sees a drowning person and feels a sense of responsibility toward helping him, he still may not be able to do anything about the problem (and thus not truly be "responsible") if he does not know how to swim. Thus competence is also a determining factor in acting responsibly. Items illustrating this are: "Some teenagers would rather not present ideas in a group discussion, but other teenagers feel comfortable in presenting ideas in a group discussion;" or "Some teenagers are good at helping people, but other teenagers don't see helping people as one of their strong points."

3) Efficacy Regarding Responsibility

Third, a person must be willing or able to believe that taking responsible action will have an impact on the social or physical environment. This sense of efficacy is tapped by several items in the SPRS including: "Some teenagers don't think they have much say about what happens to them, but other teenagers think they can pretty much control what will happen to their lives."

4) Performance of Responsible Acts

Finally, the SPRS assesses the extent to which students perceive that they do act in responsible ways. The performance subscale includes: "Some teenagers let others do most of the work in a group, but other teenagers help in a group all they can."

A major problem in measuring responsibility is the susceptibility to socially desirable response sets, i.e., a person tends to present themselves in a positive light, giving their idealized sense of responsibility, rather than their actual level. Berkowitz (1965) acknowledged this tendency of his own scale and has accepted it: "I would have been surprised and disappointed if the Social

Responsibility Scale (SRS). . . had not been related to the various social desirability measures . . . The SRS assesses a readiness to do what is socially desirable, including the giving of socially desirable responses to opinion statements" (p. 757). This, however, appears to be a problem that attenuates both the validity and the utility of such scales. One way of attacking the problem is through question format. Harter (1978) has devised a "structured alternative format" in which the respondent is presented with the following type of question:

Really true	Sort of true				Really true	Sort of true
☐	☐	Some kids often forget what they learn	BUT	Other kids remember things easily	☐	☐

The student is first asked to decide which kid is most like him or her and then asked whether this is only sort of true or really true for him or her. As Harter states: "The effectiveness of this question format lies in the implication that half of the kids in the world (or in one's reference group) view themselves in one way, whereas the other half view themselves in the opposite manner. That is, this type of question legitimizes either choice. Confidence in this format is bolstered by the fact that the children's verbal elaborations on the reasons for their choices indicate that they are giving accurate self-perceptions rather than socially desirable responses" (Harter, 1978). For all these reasons, this type of question format seemed ideally suited for the Social and Personal Responsibility Scale and was used with only slight alteration. Rather than use the terms "really true" or "sort of true" as Harter did, "almost always true for me" and "sometimes true for me" were used.

Because the scale was created specifically for this study, it had not undergone thorough analysis regarding its validity and reliability. Some tests were done before it was used, however, and others were performed as part of the overall research effort. Its construct validity was strengthened by several factors: its objective scoring system; random reversal of items to eliminate response bias; standardized administration procedures. The format is both clear and readable as established by extensive pretesting of the scale and empirical investigation of reading level (grade 7/8 on the Dale-Chall Reading Level Test and grade 7 on the Fry test). In addition, several items were adapted from the standardized Berkowitz SRS, and these and others were examined by other researchers including Drs. Harter and Connell of the University of Denver who have been working on ways to assess responsibility in elementary school children. Finally, five independent judges agreed (.92) on the category placement of the 24 items in the scale. Tests for concurrent validity were designed as part of the study itself including establishing correlations between the SPRS and teacher/supervisor ratings on student responsibility. Reliability for the test as a whole was checked through the use of Cochran's Q and a reliability level of .83 was attained.

Intellectual Development and Academic Learning.

Community Problem Inventory. This test instrument was also designed for this study and was included as part of the posttest battery only. Its purpose was to assess whether direct involvement in the community increases awareness of community problems, and knowledge of resources available to resolve or ameliorate such problems. The instrument consists of two open-ended questions. The first simply asks the respondent to "name one problem in your community that you have become aware of recently." The second asks the respondent to name specific people and/or organizations in his/her community that might be contacted for further information about or assistance with the problem identified. The responses are scored by simply noting whether a problem was named, and by counting the number of resources listed. The responses may be further interpreted by analyzing the kind and quality of problems and resources listed and by assessing the extent to which the citations relate to the kinds of experiences encountered by students in their field placements. Unfortunately, unclear directions and confusing placement in the test battery made this instrument of doubtful value for this study and results from it were not analyzed or reported.

Problem Solving. The other major instrument created especially for this study was designed to test for changes in problem solving ability. It was important to have such a measure both because of the interest in problem solving expressed by panel members and because a device was desired to assess effects in the realm of intellectual growth. The starting place in designing the instrument was the problem solving research pioneered by Spivack, Platt and Shure (1976). While a serious debt is owed to them, they cannot be burdened with more than scant responsibility for the final product which bears almost no resemblance to the instruments with which they work.

The instrument is designed as a proximate measure of a person's inclination and ability to perform four tasks which are central to the process of solving problems involving interpersonal conflict. The tasks are taken from John Dewey (1910; Archambault, 1964), and the protocol itself takes the respondent directly through the steps in problem solving which he delineated: a felt problem (approximated by a stimulus story); leaping to a solution; generating more choices and alternatives; considering the consequences; choosing; and evaluating the outcome (approximated by analysis of the problem). The protocols are scored according to the degree the respondent: 1) can generate alternative solutions to the problem; 2) actively seeks to resolve the problem and accepts responsibility for its resolution; 3) considers the merits of alternative solutions in terms of their consequences; 4) comprehends the complexity of the problem and is oriented to the growth of both self and others.

The respondent receives four separate scores based on the elements in problem solving listed above. Scoring procedures for the first three measures are relatively simple and straightforward. The fourth is much more complex, incorporating elements of several interrelated developmental perspectives including ego development (Loevinger, 1976), moral development (Kohlberg and Gilligan, 1971; Rest 1976a), role-taking (Selman, 1976), cognitive complexity (Perry, 1970), and level of need (Maslow, 1968). It is scored on a seven point scale made up of the following levels:

1. Impulsive Action
   Nothing written, no reasons given, no problem perceived.

2. Impulsive - Judgmental
   Usually some acknowledgment of a problem, but little or no evidence of there being any thought given to it. Lacks sense of responsibility toward, or shows no concern for others. Solutions or explanations expressed through snap judgments, labeling, arbitrary condemnation. May even recommend violence as the solution. Basically, little or no evidence of their being engaged in "problem solving" in any meaningful sense of the term. Attention to other's thinking limited to "beating some sense into them."

3. Self Protective
   Clearest concern and sense of responsibility is for self--not being caught, or being manipulated, looking foolish. Others are important only as threats to oneself or as possible givers of concrete rewards to self. "Looking out for #1" and little doubt about who that is! Concern for other's thinking directed toward acknowledgment of oneself and own problems, not that of the other.

4. Formalistic--Superficial Concern
   Does show some concern for other(s) but superficially so as evidenced by being expressed via cliches, stereotyped thinking, invoking of conventional norms and values (more as slogans than as empathetic/sympathetic concern or understanding). Concern for rules and for appropriate role behavior. May focus on physical over psychological needs or causes. Concern for "niceness" etc., directed toward looking good more than with actually being that kind of person. Concern with cognitive issues not so much for helping the other rationally weigh the issue as to bring them to some foreordained conclusion--usually the acceptance of some rule or conventional norm that is taken as absolute.

5. Relational Concern
Between self and specific or generalized other(s). Strong emphasis on love, belonging, friendship, being liked, acting kind. Want to be and to be known as a kind, giving, "good" person (seem to value this, not just to "look good" at the moment). Sympathetic to the needs of others and wants to avoid hurting them. Cognitive concern emphasizes opening and maintaining dialogue, and generally increasing information and understanding (of self, situation, and others).

6. Responsible Concern
Thinking seems to include level 5 concerns, but goes beyond friendship and sympathy to a concern for other's esteem, self respect, and independence. Attention to physical problems retains this respect with assumptions made thoughtfully, non-judgmentally, and usually tentatively held. May evidence thoughtful desire to live up to personal values, and may show clear awareness of value conflict, or question whether their own values are appropriate. Cognitive emphasis is on a person having information or understanding to empower them to make a better personal decision. Assumptions of incompetence (or of foregone conclusions) must be thoughtfully and tentatively and respectfully made.

7. Principled Concern--Beyond Self and Other
Beyond immediate players in the situation to social, institutional causation and/or to generalized rules (principles) of behavior. Evidence of complex thinking, with explanations vividly expressed and consistent throughout protocol. Goes beyond responsibility for others' welfare to vivid concern for autonomy (i.e., beyond independence to basic right to dignity and self determination) for all persons. Statement of values and value conflicts also goes beyond immediate actors to apply to wider society. Focus on cognitive issues emphasizes right to personal autonomy, choice, self determination.

   (Note: keys to distinguishing 7 from 6 are indications of social/institutional causation; wider application of analysis; consistency within the protocol; and vividness/complexity of discussion)

The primary (and preliminary) case for the validity of the instrument as a reasonable measure of problem solving must be based on a rational analysis of its content and scoring procedures. As indicated above, the overall dimensions of the protocol are directly based on the steps in problem solving delineated by John Dewey. Additionally, the incorporation of four separate dimensions of problem solving makes it a broad measure of the concept, not seeking (or claiming) to assess a broad concept while measuring only a narrow slice of it.

Three of the four protocol elements (alternatives, responsibility, consequences) involve relatively straightforward scoring procedures that could be established without formulating a new theoretical framework. The fourth (cognitive complexity and empathy) did require such a construction. As indicated above, the seven levels in the index represent a combination of developmental perspectives. That they do in fact represent such a combination is partly based on rational analysis, but was also tested empirically. Thus part of the research procedure was to correlate a sample of student scores on this index with their moral reasoning scores from Rest's Defining Issues Test. This was done using the Pearson Product-Moment test and the scores correlated at a level of .43 (N=60). The likelihood of this correlation being a mere chance occurrence is less than .01. This finding suggests that the two tests do tap some common--but not identical--dimensions of thought and development. The convention of squaring the correlation suggests about a 20% (.19) overlap between the measures. This finding is consistent with the theoretical base for the test which includes moral reasoning as but one of five developmental/psychological dimensions incorporated in the scale. A smaller sample (N=20) was tested pre and post on both the Problem Solving and DIT tests. Change scores on the two tests were found to correlate at $\underline{r} = .78$, an even stronger indication that they measure at least some common developmental elements.

One further indication of concurrent validity is the similarity of the Complexity/Empathy Scale to the scale of Prosocial Reasoning developed by Eisenberg (1978). Eisenberg investigated prosocial reasoning in elementary age children. One of her key hypotheses was that prosocial reasoning is somewhat different, and develops earlier, than the prohibition moral reasoning tested by Kohlberg. When presented dilemmas of a prosocial nature, children will demonstrate higher cognitive maturity (less preconventional and more stereotyped and empathetic reasoning) than they will in response to Kohlberg-type dilemmas. To test the hypothesis she elicited student reactions to several prosocial dilemmas and created a nine-stage index for scoring their responses. The scoring index she developed (independently) very closely parallels the one developed for testing cognitive complexity and empathetic reasoning in this study. The Eisenberg Index is reprinted in Appendix C.

Several other checks of concurrent validity could be usefully pursued. These would include establishing correlations with other developmental measures (Perry, Selman, Loevinger); with parent and supervisor reports of actual student behavior; and with respondent characteristics such as age, grade, sex, academic achievement and basic writing skill. Such tests would be interesting, but were beyond the scope of the present study.

The most critical validity-check of any test instrument is its ability to reflect or to predict actual behavior. Such a check was conducted on the Complexity/Empathy Scale. The directors of three programs were taught the content and the scoring system of the Scale. They were then asked to rate a random selection of their students on the Complexity/Empathy Scale based on their own observations of and interactions with them. Their assessments (made at the conclusion of the program and without seeing the students' protocols) were compared with their students' scores on the posttest. Their assessments coincided exactly with student scores in 73% of the cases with a Pearson Product Moment correlation of $\underline{r} = .84$ (N = 45).

A final word should be added regarding the procedures for scoring the protocols. Four scorers were involved in scoring the problem solving instrument. Interrater reliabilities were calculated and are reported in Table 3:2 below.

Table 3:2

Interrater Reliabilities for Problem Solving Inventory

Pearson Product-Moment Correlations

	Rater A			
	Alternatives	Responsibility	Consequences	Complexity/ Empathy
Rater B	.98	.90	.82	.92
Rater C	.99	.98	.94	.90
	Rater D			
Rater A	.97	.89	.85	.93
Rater B	.93	.75	.48*	.89

*With only 3 possible scores on this dimension and few subjects scoring lower than 2, interrater differences were likely magnified due to lack of range. The absolute agreement between Raters D and B on the Consequences dimension was 80%.

While the interrater correlations were extremely high, even further precision was desired because of the newness of the instrument. Thus, each protocol was scored independently by at least two scorers. Ratings were then compared and differences resolved in conference. Appendix B outlines the scoring procedures for all four parts of the instrument. Pretest scores from each of the four stimulus stories were compared, and no systematic differences were found in the mean scores elicited by the stories.

Questionnaires

In addition to the test instruments described above, further data was collected through a variety of questionnaires.

Demographic data was collected on each student including information on age, grade in school, grade point average, parents' education and occupation, and each student's own career aspiration.

Factors of experience. Each respondent was asked to rate his or her own field experience on a four point scale from excellent to terrible, and to explain the rating. They were then presented with a list of features of community experiences and asked how often each was a feature of their own experience. Some of the items were stated positively ("made important decisions") and some negatively ("I never got help when I needed it"). The scale was adapted from one developed by Owens and Owen (1978) and was used to help determine what features of a field experience are critical in making it successful for the student.

Anecdotal records. Each program director was asked to keep anecdotal records of student growth and performance. The anecdotes were to be collected around the same issues as were addressed by the formal test instruments: responsibility, self esteem, problem solving, career choice, attitudes toward others. These were used to add further depth to the quantitative data gathered through more formal means.

Case studies. Finally, the origin, development, and day-to-day operation of many of the programs were examined through on-site visits and written up as case studies. This was done by the Project's co-director and by Gary Fornander and Barbara Shoup of the Panel of Practitioners. The purposes were to identify effective program practices, to aid in interpreting student outcomes, and to better capture the flavor and spirit of experiential programs. Portions of one case study have appeared as an article by Barbara Shoup in Kappan magazine.

Methods of Data Analysis

The data in this study were analyzed in two distinct phases. In phase one, the goal was to assess the impact of experiential learning on the social, psychological and intellectual development of students. In phase two, the goal was to discern the differential impact of selected program features on student development in these same three areas.

Phase One: Impact of Experiential Education

Within phase one, different procedures were used depending on the particular question being investigated and the design used in gathering the original data. In each case the analytical procedures were similarly applied to all test instruments.

Step one was to compare the pre-post mean scores for each experimental group. A t-test of means for correlated groups was applied to determine whether the pre-post means differed significantly. For programs in which no comparison group was available, this was the only procedure used. For the other groups the correlated t-test was used as a preliminary estimate of effect, and in order to provide one analytical test in common across all programs. Data was analyzed in this way for each program separately, and for the experimental groups combined and for the control groups combined.

Step two was to analyze separately the programs where comparison groups were available. Each of the four experimental-control pairs were compared separately and then as combined pairs. The statistical test used was the t-test for independent populations.

In all cases the t-test was used as only a rough indicator of effect and significance of effect. Particularly because of the t-test's responsiveness to sample size, the calculated significance levels were often less instructive than the absolute means and changes in means that were recorded for each test instrument. At the same time, more sophisticated analytical tools (e.g., multiple regression) would have made interprogram comparisons more cumbersome and, in this phase, not added to the primary aim of assessing overall program impact.

Phase Two: Differential Impact of Programs

This phase was accomplished in three steps. In step one, an Index of Effectiveness was created for each of the major areas of study (social, psychological, and intellectual development) as well as for all areas combined. Programs were ranked by effectiveness on each of these indices. The profiles of high and low ranking programs were then examined to determine if there were systematic differences between them.

In step two, analysis of variance was employed to assess the relative effect of type of experience, length and intensity of experience, and existence of a seminar. Multiple Classification Analysis was used to determine direction and extent of differential impact.

In step three, a multiple regression model was used to identify the relative impact of program features, student characteristics, and characteristics of the experience. The pre-post gain scores on each test instrument served as the dependent variables. The above-mentioned independent variables were examined as clusters as well as by their discrete elements. This method proved to be the most useful in determining the nature and source of program impact.

Chapter Four will detail the research questions and findings as they relate to student outcomes. Chapter Five will focus on the differential impact of the major types of programs and particular features within them.

CHAPTER FOUR

Student Outcomes

Introduction

Research Questions

This study was organized around two major questions:

1) To what extent do experiential programs promote psychological, social, and intellectual development in secondary students?
2) To what extent and in what ways do different program forms and formats differentially effect growth in these areas?

Chapter Four focuses on the first of these issues, presenting data from all programs and organizing it according to the questions listed below and grouped by their relevance to psychological, social, and intellectual development.

A. Psychological Development

To what extent do experiential programs have an effect on students':

1) moral reasoning and development, as measured by Rest's Defining Issues Test;
2) self-esteem in social situations, as measured by ten items from the Janis-Field Feelings of Inadequacy Scale;
3) general self-esteem, as measured by the Rosenberg Self-Esteem Scale.

B. Social Development

To what extent do experiential programs have a positive impact on students':

1) level of personal and social responsibility, as measured by their scores on the Personal and Social Responsibility Scale and its subscales relating to Duty, Social Welfare, Efficacy, Competence, and Performance;
2) involvement in career planning and exploration, as measured by the Career Exploration Scale with its two subscales on Career Action and Career Information;

3) attitude toward others, as measured by semantic differentials on adults and on the kinds of person with whom the students were in primary contact in their field placements such as elderly, children, police, junior high youth, and business persons;

4) attitudes toward active participation in the community, as measured by a semantic differential on "being active in the community."

C. Intellectual Development

To what extent do experiential programs have a positive effect on students':

1) level of learning, as indicated by self reports of participants;

2) ability to analyze and solve problems, as measured by the Problem Solving Inventory and its indices of Alternatives, Consequences, and Complexity/Empathy.

Identification of Programs

The study involved over 1,083 students in 27 experiential programs and 6 comparison groups in 23 different schools. In order to reduce the potentially confusing array of data into reasonably comprehensible units the programs were grouped into categories and then identified by the kind of experience featured in the program rather than by school name.

The categories and programs were identified as follows (detailed descriptions are given in Chapter Two).

Community Service Programs. Students in these programs served as volunteers in human service organizations such as nursing homes, day care centers, elementary schools, hospitals, counseling centers, and institutions for mentally, physically or emotionally handicapped people. The programs are identified in this study as:

Service A--Community Service Program; Bishop Ward High School, Kansas City, Kansas;

Service B--Peer Counseling Program; Work Opportunity Center, Minneapolis, Minnesota;

Service C--Social Studies Lab; Eisenhower High School, Hopkins, Minnesota;

Service D--Community Involvement Program; Eisenhower High School, Hopkins, Minnesota;

Service E--Community Awareness Program, Mayo High School, Rochester, Minnesota;

Service F--Community Experience Program, Ridgewood High School, Norridge, Illinois;

Service G--Community Commitment Program, 9th and 10th grades, Cathedral High School, Duluth, Minnesota;

Service H--Community Commitment Program, 11th and 12th grades, Cathedral High School, Duluth, Minnesota;

Service I--Experiential Education Course, Francis W. Parker Middle School, Chicago, Illinois;

Service J--Experiential Education, 12th grade, Francis W. Parker School, Chicago, Illinois.

Comparison 1--Senior Social Science Class; Eisenhower High School, Hopkins, Minnesota.

Outdoor Adventure Programs. Students in these programs were involved primarily (some exclusively) in outdoor adventure activities. The specific activities included wilderness trips, rock climbing, camping, living in a rural setting, archeological excavation, and the like. The programs were:

Outdoor A--Spring Outdoor Program; Packer Collegiate Institute, Brooklyn, New York;

Outdoor B--Fall Senior Semester Program; Mitchell High School, Colorado Springs, Colorado;

Outdoor C--Spring Senior Semester Program, Mitchell High School, Colorado Springs, Colorado;

Outdoor D--Spring Outdoor Adventure Program, St. Benedict's Preparatory School, Newark, New Jersey.

Comparison 2--Senior Psychology Class; Mitchell High School, Colorado Springs, Colorado;

Comparison 3--Random Sample of Student Population, St. Benedict's Preparatory School, Newark, New Jersey.

Career Internships. Students in these programs served as interns in business, government, arts, education, and social agencies. The major purpose of these experiences was to get an inside view of an organization and occupation, and to test one's competence within it. The programs are identified in this study as:

Career A--Community Internship Program; Beverly Hills High School, Beverly Hills, California;

Career B--Medical Internship Program; Central High School, Minneapolis, Minnesota;

Career C--Spring Career Internships; Packer Collegiate Institute, Brooklyn, New York;

Career D--Community Construction Program, St. Paul Public Schools, St. Paul, Minnesota;

Career E--10th grade CIPED, South Brunswick High School, Monmouth Junction, New Jersey;

Career F--Career Education CIPED, South Brunswick High School, Monmouth Junction, New Jersey

Career G--12th Grade CIPED, South Brunswick High School, Monmouth Junction, New Jersey;

Career H--Community-Based Learning Programs, Allegheny Intermediate Unit, Pittsburgh, Pennsylvania.

Comparison 4--In-School Enrichment Program; Packer Collegiate Institute, Brooklyn, New York.

Community Study Programs. Students in these programs studied their communities first-hand by conducting surveys and interviews, and through direct observation. Also included in this category were social and political action projects which focused on efforts to influence (and to inform others on) public decision-making. The programs included in this category are:

Community Study A--Consumer Action Program; Students Serving Students Project, St. Paul, Minnesota;

Community Study B--Community Issues Program; Kirkwood Junior High School, Kirkwood, Missouri;

Community Study C--Consumer Action Course, Southwest Secondary School, Minneapolis, Minnesota;

Community Study D--Learning Unlimited, North Central High School, Indianapolis, Indiana;

Community Study E--Community Study Program, St. Benedict's Preparatory School, Newark, New Jersey.

Comparison 5--9th Grade Social Studies Class; Kirkwood Junior High School, Kirkwood, Missouri;

Comparison 6--10th-12th grade English Courses, North Central High School, Indianapolis, Indiana.

Data and Statistics Reported

The first three sections of this chapter report pre-post data on the overall impact of the experiential programs. For each test instrument, results are reported for each group as well as for the experimental groups combined and for the comparison groups combined. These data are followed by results from the six experimental/control pairs, first as individual pairs and then in combination. The basic data throughout are the pre-post means (and standard deviations) and mean change scores. As one aid to interpreting these scores, a t-test for correlated groups was applied to the pre-post scores of each group (and set of groups). A t-test for independent samples was used for the experimental/control comparisons. Significance levels of at least $P = < .10$ are reported with all others recorded as NS (non-significant). The conventional standard of $P = < .05$ has been adopted as an indication of statistical significance with levels between $P = < .1$ and $< .05$ considered as trends or at least of some interest. Since the power of the t-test is so responsive to sample size, and the groups in the study varied so widely in that regard, the reported significance levels serve best as a secondary check on interpretations suggested by the base data: the amount, direction and consistency on mean changes.

Psychological Development

The first hypothesis to be tested was that participation in an experiential program will have a positive effect on the psychological development of students. Experimental and comparison students in all programs were administered the Janis-Field Feelings of Inadequacy Scale (10 question version) and the Rosenberg Self-Esteem Scale. In addition, three groups from one school (Eisenhower High School, Hopkins, Minnesota) were given the Rest Defining Issues Test.

Defining Issues Test (DIT)

The groups which took the DIT test were made up of students in three 12th grade social studies classes in the same school. Each was briefly introduced to moral development theory presented through identical lessons taught by the same instructor. The key differences between them were that students in Service D also performed 6 to 8 hours of volunteer service per week and discussed their experiences in a weekly seminar; students in Service C served 2 to 4 hours per week and had a regular psychology class; and the comparison students were involved in no off-campus experience as a part of their social studies (psychology) class.

Table 4:1 summarizes the pretest and posttest results for the DIT in terms of the student P-scores (the raw score obtained by adding subtotals from Stage 5A, 5B, and 6), and the percent of usage of Principled thought.

The two experimental groups showed gains in their P-score means of 3.75 and 3.37 (significant at $P= < .05$) while the comparison group showed a decrease of -.79 (non-significant). Similarly, when the raw P scores were converted to percent of P scores the experimental groups increased 6% and 7% respectively while the comparison group declined by 2%.

To test whether these results represented real differences, the data were further analyzed by comparing the mean gain scores for one experimental group with the comparison group, and applying to the scores a t-test for independent populations. Service D, the experimental group with the least change was used as the more conservative comparison with the comparison group. The results are reported in Table 4:2.

Table 4:2 indicates that the gains in principled reasoning registered by the experimental groups (Service D and, by implication, Service C) did represent a statistically significant difference from the finding of a slight decline by the comparison group ($P= < .04$). These findings are consistent with those reported by Hedin (1979) in which students in an experiential program achieved similar gains while those in their control group remained at the same level. In general, the results from the DIT provide evidence to support the hypothesis that students exposed to a combination of instruction in moral development theory and direct volunteer service will show greater increases in principled

Table 4:1

Rest DIT Scores (Raw & Percent P) for Two Experimental Groups and One Comparison Group

		Pretest	Posttest	Mean Gain	t-value	P=(1-tail)
Service C (N=24)	$\bar{X}$	19.58	23.33	3.75	1.78	<.04
	sd	7.08	10.17			
	(%)	(32%)	(39%)			
Service D (N=24)	$\bar{X}$	17.13	20.50	3.38	1.72	<.05
	sd	6.84	9.93			
		(29%)	(35%)			
Comparison 1	$\bar{X}$	20.00	19.21	- .79	.64	NS
	sd	8.14	7.44			
	(%)	(34%)	(32%)			

Table 4:2

Rest DIT Scores
Pretest-Posttest Main Gain Score Comparison
for Experimental Versus Comparison Groups

	Mean Gain Scores	t-value	P=(1-tail)
Service D (N=24)	3.38	1.80	<.04
Comparison 1 (N=24)	- .79		

reasoning than students receiving classroom instruction alone. Stated negatively, the evidence suggests that merely receiving classroom instruction in moral development theory is not sufficient to produce increases in principled moral thought.

Janis-Field Feelings of Inadequacy Scale

The 10 item version of this scale was given pre and post to all students in the study. Table 4:3 summarizes the results separately for each experimental and comparison group. The hypothesis to be tested was that students in experiential programs would increase their scores and do so to a greater degree than students in regular classroom programs.

The results in this table reveal highly similar pre-post means between and movement by the experimental and the comparison groups. Among the experimental groups, 20 of the 27 moved in a positive direction, 10 significantly ($P= < .05$). Seven of the others achieved at least a 1.0 mean gain. Five of six of the comparison groups also showed positive change, three to a statistically significant degree and one other with a mean gain of over 1.0. The Janis-Field Scale measures the confidence which an individual feels in social situations (e.g., speaking in front of a class, meeting new people, etc.) and the above results suggest that this psychological dimension is one on which secondary students in general show growth. To test whether the increases by the experimental groups were different from those of the comparison groups, a t-test for independent samples was applied to the mean gain scores of each of the experimental comparison group pairings used in the study. As a summary to this table, the same test was applied to the six experimental/comparison pairs.

As revealed in Table 4:4, five of the six groups had at least some pre-post gain. While the mean gain of each experimental groups was greater than that of its comparison, the difference in gain scores was statistically significant

Table 4:3

Janis-Field Feelings of Inadequacy Scale
Pre-Post Means and Mean Gains for Each
Experimental and Comparison Group

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service A	67	27.75[a] 5.69	29.13 5.19	1.39	2.33	<.01
Service B	15	31.27 5.74	30.80 6.33	-.47	.19	NS
Service C	41	32.56 6.08	34.10 5.18	1.54	2.82	<.001
Service D	65	31.73 6.35	34.03 5.77	2.29	3.92	<.001
Service E	27	30.37 5.29	31.42 5.68	1.04	.99	NS
Service F	31	29.36 5.12	30.37 5.40	1.01	1.49	<.07
Service G	20	30.41 6.46	29.01 5.52	-1.40	1.95	<.03
Service H	21	30.25 5.71	29.92 5.70	-.33	.28	NS
Service I	111	32.58 5.39	33.09 6.15	.50	1.29	<.10
Service J	7	36.95 4.76	37.64 5.02	.69	.71	NS
Service Comp. #1	89	30.37 6.01	31.29 6.30	.92	1.97	<.03
* * * * * * * * * *						
Outdoor A	65	29.47 4.99	30.52 7.11	1.05	2.34	<.01
Outdoor B	25	30.52 4.82	33.24 5.29	2.72	3.16	< .002
Outdoor C	37	31.08 5.94	33.43 7.42	2.35	2.69	<.01
Outdoor D	27	31.74 4.19	30.30 4.94	-1.40	1.45	NS

Table 4:3 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Outdoor Comp. #2	39	31.03 6.73	32.77 6.73	1.74	2.21	<.017
Outdoor Comp. #3	48	33.05 5.41	32.40 5.24	-.65	1.04	NS
			* * * * * * * * * *			
Career A	33	33.79 5.50	34.79 5.08	1.00	1.25	NS
Career B	11	33.91 3.02	35.36 3.75	1.45	1.12	NS
Career C	26	32.74 2.13	33.45 6.96	1.07	1.11	NS
Career D	10	31.98 4.30	34.57 7.47	2.50	1.24	NS
Career E	57	30.73 6.28	30.32 5.70	-.41	.57	NS
Career F	36	30.67 7.06	29.58 6.49	-1.08	1.26	NS
Career G	40	30.43 6.38	30.80 5.27	.33	.46	NS
Career H	15	28.62 5.06	31.13 4.64	2.50	3.32	<.002
Career Comp. #4	57	31.44 7.04	32.14 7.30	.70	1.09	NS
			* * * * * * * * * *			
C. Study A	24	28.40 5.60	29.06 3.94	.66	.81	NS
C. Study B	50	30.25 5.47	31.31 6.78	1.92	1.33	<.095
C. Study C	29	29.97 6.32	31.75 6.83	1.78	1.41	<.09
C. Study D	94	31.44 6.09	37.81 6.34	1.36	2.53	<.007

Table 4:3 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
C. Study E	32	34.71 6.46	33.34 6.85	-1.37	-1.82	<.04
C. Study Comp. #5	18	30.04 7.34	31.60 7.19	1.56	1.63	<.061
C. Study Comp. #6	83	31.27 6.25	32.60 6.08	1.34	2.56	<.006

* * * * * * * * * * *

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
All E's	1008	$\overline{X}$ 31.06 sd 6.08	31.91 6.22	.85	5.53	<.0001
All C's	334	$\overline{X}$ 31.22 sd 6.22	32.11 6.37	.89	3.52	<.0001

[a] The highest mean score possible was 50.

Table 4:4

Janis-Field Feelings of Inadequacy Scale
Pre-Post Mean Gain Score Comparisons
Between Experimental & Matched Comparison Groups

	(N)	Pre-Post Mean Gain	t-value	P=(1-tail)
Service D	(65)	2.29	1.84	.034
Comp. 1	(89)	.92		
Outdoor C	(37)	2.35	.52	NS
Comp. 2	(39)	1.74		
Outdoor D & C. Study E	(60)	-1.41	.89	NS
Comp. 3	(48)	-.65		
Career C	(22)	1.07	.39	NS
Comp. 4	(57)	.70		
C. Study B	(50)	1.92	.30	NS
Comp. 5	(18)	1.56		
C. Study D	(94)	1.36	.04	NS
Comp. 6	(83)	1.34		
Above E's	(371)	1.08	.80	NS
Above C's	(334)	.89		

(P= <.05) in only one case (Service D against Comparison 1). Further, when all experimental groups are merged and compared to all comparison groups, the experimentals show a slightly larger mean gain but the difference is not significant.

The results from the Janis-Field Scale suggests that students in experiential programs do gain in social situational self-esteem, though to a degree only slightly greater than that of students in regular school programs.

Rosenberg Self-Esteem Scale

In contrast to the Janis-Field Scale, the Rosenberg Self-Esteem Scale is a measure of more general feelings of self-worth or esteem (e.g., "I feel that I have a number of good qualities," "I certainly feel useless at times"). The pre-post results for each experimental and comparison group are reported in Table 4:5.

The pattern of results on the Rosenberg Scale is similar to that for Janis-Field. Twenty-three of the 27 experimental groups showed a mean gain, nine at a statistically significant level. There were some differences, however. While more experimental groups increased on the Rosenberg Scale, the magnitude of change was smaller than for the Janis-Field. The overall gain of all experimental groups was .74 on the Rosenberg Scale versus 1.08 on Janis-Field. This observation lends support to the previously tendered observation that the Rosenberg Scale taps more global and thus more stable dimensions of self-esteem than does the Janis-Field. Further evidence that the scales are separate measures of self-esteem is suggested by a Pearson correlation analysis of scores on both tests. The pretest scores showed a modest correlation of .599 while pre-post change scores correlated at the very low level of .370. Overall, the greater difficulty of showing change on the Rosenberg Scale was most strongly evidenced by the comparison group results. When all comparison groups were

Table 4:5

Rosenberg Self Esteem Scale Pre-Post Means and Mean Gains for Each Experimental and Comparison Group

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service A	67	29.37[a] 5.26	30.99 4.28	1.62	3.28	<.001
Service B	15	29.49 5.67	29.22 2.61	.27	.14	NS
Service C	41	31.54 4.19	32.56 4.43	1.02	1.51	<.07
Service D	65	31.27 3.87	32.34 3.91	1.07	2.75	<.004
Service E*	27	29.56 3.71	30.98 4.25	1.42	1.74	<.047
Service F	30	28.60 3.78	28.56 3.26	-.03	.07	NS
Service G	20	28.85 4.10	29.40 3.76	.55	.90	NS
Service H	12	28.00 4.20	30.67 4.85	2.67	3.70	<.002
Service I	109	30.28 4.31	30.65 4.91	.37	1.27	<.10
Service J	7	35.57 2.57	34.86 3.13	.71	.72	NS
Service Comp. #1	87	32.08 4.50	32.03 4.65	-.05	.15	NS
		* * * * * * * * * *				
Outdoor A	64	29.46 4.99	30.53 5.48	1.07	2.22	<.02
Outdoor B	25	29.60 4.25	31.55 3.97	1.94	2.20	<.02
Outdoor C	37	30.10 4.02	31.43 4.26	1.34	2.45	.01
Outdoor D	27	32.29 3.42	32.07 4.51	-.21	.27	NS

Table 4:5 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Outdoor Comp. #2	39	30.34 4.83	31.00 4.44	.66	1.12	NS
Outdoor Comp. #3	40	32.90 3.30	32.08 4.09	-.82	1.36	.09
* * * * * * * * * * *						
Career A	33	33.94 4.25	34.42 4.40	.48	.79	NS
Career B	11	31.27 5.22	32.42 3.95	1.15	.62	NS
Career C	26	33.00 4.45	33.48 4.69	.48	1.11	NS
Career D	10	30.85 4.16	33.00 3.94	2.15	1.89	.05
Career E	56	29.95 4.28	30.21 5.03	.26	.57	NS
Career F	35	31.03 4.87	30.91 5.21	-.13	.24	NS
Career G	40	31.13 3.39	31.85 4.39	.71	1.26	NS
Career H	16	30.33 3.23	31.44 2.94	1.12	1.93	.04
Career Comp. #4	56	31.35 4.76	32.21 4.91	.86	2.34	<.01
* * * * * * * * * * *						
C. Study A	25	28.30 3.53	28.97 3.97	.67	1.48	.08
C. Study B	50	29.37 4.77	30.24 4.75	.87	1.32	.096
C. Study C	29	29.28 5.96	30.39 6.63	1.12	1.00	NS
C. Study D	94	31.45 3.85	31.92 4.04	.47	1.09	NS

Table 4:5 (cont.)

	N	Pretest Mean/sd	Postest Mean/sd	Mean Gain	t-value	P=(1-tail)
C. Study E	32	32.72 4.04	32.54 3.83	-.18	.81	NS
C. Study Comp. #5	17	30.69 4.08	29.74 4.11	-.95	1.57	<.07
C. Study Comp. #6	84	31.40 4.55	32.42 4.36	1.02	2.51	<.01
* * * * * * * * * *						
All E's	1004	30.52 4.94	31.27 4.62	.74	6.18	.0001
All C's	332	31.63 4.45	31.33 4.51	-.30	1.55	<.06

[a] The highest mean score possible was 40

combined, they showed a decline which approached statistically significance ($<$.06). In contrast, the combined experimental groups showed an increase which was highly significant. Three of the comparison groups showed gains, with two statistically significant. Two of the comparisons showed declines that approached statistical significance (P=$<$.068).

The contrast between experimental and comparison groups is detailed in Table 4:6. In two of the six experimental comparison pairings, the gain by the experimental groups was significantly greater than that of their comparisons. The remaining four pairs showed no significant differences. Combined, the experimental groups' advantage over the comparisons did reach statistical significance (P=$<$.034). The results from the Rosenberg Scale reinforce those of Janis-Field, and indicate that participants in experiential learning programs do show increases in self-esteem and to a degree slightly but consistently greater above those registered by comparable participants in classroom-based programs. The most consistent high gainers were Outdoor B and Outdoor C and, in relation to its length (4-weeks), Outdoor A. This suggests that intensive outdoor experiences may have a particularly powerful effect on self-esteem.[1] One reason may be that the evidence of achievement (both in comparison to regular

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[1] Note: The sole inconsistent score among the Outdoor programs was recorded by Outdoor D which declined on this and almost every other scale in the test battery. This group, as well as Community Study E and Service B showed consistent declines. Service B showed great resistance (perhaps resentment) at taking the post-test. As the group was entirely made up of youth in a special program (indeed school) for unsuccessful and alienated students, this attitude toward paper and pencil tests was understandable--even predictable. Students in Outdoor D and Community Study E were, for the most part, inner city, minority youth who also had a history of negative experience with educational testing. The test results for these three groups were nearly always inconsistent with those of the other programs and with the qualitative (interviews, observations, examination of journals, etc.) of their own growth and achievement. Thus their test results cannot be considered a valid indicator of program effect. Nonetheless, the results are consistently reported as of interest in themselves and as a reminder that paper and pencil tests are not always a valid assessment tool, especially for students who have a history of failure on and resentment toward them.

Table 4:6

Rosenberg Self Esteem Scale
Pre-Post Mean Gain Score Comparisons
For Experimental and Matched Comparison Groups

	(N)	Pre-Post Mean Gain	t-value	P=(1-tail)
Service D	(65)	1.07	2.16	.016
Comp 1	(87)	-.05		
Outdoor C	(37)	1.34	.84	NS
Comp. 2	(39)	.66		
Outdoor D & C. Study E	(60)	-.17	.85	NS
Comp. 3	(49)	-.82		
Career C	(22)	.48	.75	NS
Comp. 4	(56)	.86		
C. Study B	(50)	.87	1.82	<.038
Comp. 5	(17)	-.95		
C. Study D	(94)	.47	.94	NS
Comp. 6	(84)	1.02		
Above E's	(370)	.72	.76	<.034
Above C's	(322)	-.30		

school achievement and in terms of newly acquired competencies) is seen by, matters to, and is immediately reinforced by both teachers and peers. In more individualistic and less unique experiences, new images of competence are not so important to or so clearly demonstrable to these reinforcing agents and thus perhaps less clearly felt.

Summary

Students in experiential learning programs did tend to gain on the measures of psychological growth employed in this study. Their strongest advantage vis-a-vis comparisons was registered on the Defining Issues Test where students combining experience with reflection (and instruction in moral reasoning) gained significantly over their controls which received classroom instruction only. While these results were gleaned from programs in only one school, they are consistent with those found in several other studies of programs combining experience and reflection (Hedin, 1979b; Cognetta, 1978; Alexander, 1977; Sullivan, 1975).

Results from the Janis-Field Feelings of Inadequacy Scale and the Rosenberg Self Esteem Scale are consistent with, if not as clear-cut as, the above. The esteem scale on which students showed the greatest amount of pre-post change was the Janis-Field Scale. Both experimental and comparison groups showed consistent gains. The gains by the experimental groups were consistently higher than those of their comparisons but the difference was significant in only one case. On the more stable Rosenberg Scale, the gain scores of the experimental groups were also consistently greater. The difference was significantly higher for the combined experimental groups when compared with the combined comparison groups.

There were some differences between types of programs on these self-esteem scales. The highest pretest mean scores, for example, were attained by students involved in career internship programs. It may be that such program attract students who are relatively more sure of themselves, at least enough to test themselves in adult career roles and to choose an individual, in contrast, to a group experiential task. The strongest pre-post gains were registered by students in outdoor programs. It may be that the challenge of the wilderness, the opportunity for immediate and consequential feedback on whether or not one met the challenge, and likelihood of successfully completing well-supervised outdoor experiences are the reasons for the large increases in self-esteem. While outdoor programs were the strongest gainers on both scales, the other three program types show a different pattern. Career exploration programs had the next largest gains on the Janis-Field, followed closely by Community Study. On the Rosenberg, volunteer service programs showed the largest gains after outdoor programs, with career exploration next and community study last. The lack of consistent results among program types (with the exception of outdoor programs) indicates that categories of program do not have a uniform effect on all students. In fact, there were individual programs in each category of service, careers and community study which showed large gains on both self-esteem measures. While the available data does not allow a careful test of some of the reasons for the differences in self-esteem outcomes, our impression is that the highest gainers were in programs where students were most clearly in new roles, where there was strong emphasis on active and intense reflection on experience and where the program lasted at least 12 weeks. Later in this chapter more substantial analysis can be made of differences between programs when data from more tests are combined with additional information about the individual programs.

In summary, the results from the Defining Issues Test and the Janis-Field and Rosenberg measures of self-esteem lend support to the hypothesis that experiential programs can effectively promote the psychological development of adolescents. The data further suggest that the impact is strongest when the experience is most intensive, most dissimilar from ordinary school activities and is accompanied by a reflective component.

Social Development

Three basic instruments were used to assess the impact of experiential programs on the social development of students. The first was the Social and Personal Responsibility Scale (SPRS) which is reported as a whole as well as by its subscales: sense of Duty, Social Welfare orientation, Efficacy, Competence, and Performance. The second was a set of semantic differentials which assessed attitudes (and changes in attitudes) toward adults, community participation, and various groups of people with whom the students interacted in their off-campus experiences. Of the latter, results are reported on Old People, Little Kids, Junior High Kids, and Police. The third was the Career Exploration Scale and its two subscales: Career Action and Career Information.

Social and Personal Responsibility Scale (SPRS)

Tables 4:7 and 4:8 report results from the total SPRS scale. The scale is then broken down into its various subscales as reported in Tables 4:9 and 4:10.

Table 4:7 reveals that 23 of the 27 experimental groups changed in a positive direction, 13 by at least 1.50 mean points and at a level of statistical significance. Among the six comparison groups, five declined and one increased, with two of the decreases statistically significant. Four experimental groups declined, two significantly (Service C and Outdoor D) and two non-significantly(Service B and E). The decline for Outdoor D and Service B were anticipated as discussed earlier. The other two experimental groups showing a decline were the two groups with the highest pretest means (4-5 points higher than the combined means of all experimental groups) and their decline could be interpreted as regression toward the mean, though there was no way to tell directly. Service E, for example, registered the highest pretest mean and, on the posttest, was still the second highest while Service C had the second highest pretest mean and was still above

Table 4:7

Social and Personal Responsibility Scale
Pre-Post Means and Mean Gains for Each
Experimental and Comparison Group

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service A	63	55.27 7.65	57.10 6.97	1.83	2.36	.01
Service B	12	58.00 13.08	57.00 7.26	-1.00	.23	NS
Service C	39	62.33 5.76	60.82 6.70	-1.51	2.61	.007
Service D	62	59.27 8.80	62.16 6.27	2.89	3.07	.002
Service E	24	63.25 5.99	62.21 7.20	-1.04	.80	NS
Service F	24	54.54 8.25	56.33 6.91	1.79	1.73	.04
Service G	18	59.44 5.45	60.56 4.97	1.11	.90	NS
Service H	10	58.30 6.72	59.50 9.23	1.20	.73	NS
Service I	65	58.83 6.67	59.39 6.00	.55	.97	NS
Service J	6	59.50 12.65	60.00 5.17	.50	.12	NS
Comp. #1	77	57.83 6.38	58.25 6.09	.42	.73	NS
* * * * * * * * * *						
Outdoor A	51	55.98 6.87	57.65 6.86	1.67	2.28	.02
Outdoor B	23	58.57 5.54	60.89 6.27	1.52	1.34	.09
Outdoor C	35	56.57 7.52	57.29 8.25	.71	.80	NS
Outdoor D	22	57.50 6.72	54.82 7.24	-2.68	2.86	.005

Table 4:7 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Comp. #2	38	59.05 6.99	58.71 6.79	-.34	.37	NS
Comp. #3	43	56.56 6.60	55.47 5.00	-1.09	1.39	.09
Career A	28	60.04* 7.21	63.00* 5.89	2.96*	2.47	.01
Career B	11	59.25 6.23	62.00 7.09	2.75	1.81	.05
Career C	23	61.57 5.44	59.04 6.97	2.52	2.75	.01
Career D	3	54.67 2.00	58.00 3.51	3.33	2.22	.03
Career E	48	56.54 6.73	56.65 7.61	1.04	.15	NS
Career F	32	56.94 7.03	57.78 7.44	.84	.94	NS
Career G	34	56.53 5.65	59.59 5.19	3.06	4.12	.001
Career H	12	57.08 5.14	60.92 6.04	3.83	2.44	.03
Comp. #4	45	57.02 7.61	56.93 7.75	-.09	.15	NS
		* * * * *	* * * * *			
C. Study A	25	55.53 8.70	58.41 6.64	2.88	1.92	.04
C. Study B	46	58.07 7.93	59.78 7.92	1.71	1.74	.044
C. Study C	26	52.88 5.61	54.00	1.11	.67	NS
C. Study D	84	59.30 5.52	60.92 6.20	1.62	2.95	.002

Table 4:7 (cont.)

	N	Pretest Mean/sd	Postest Mean/sd	Mean Gain	t-value	P=(1-tail)
C. Study E	26	55.23 7.17	55.42 6.31	.19	.22	NS
Comp. #5	15	56.13 8.29	54.93 9.13	-1.20	.96	NS
Comp. #6	73	61.84 7.55	60.78 6.66	-1.05	1.64	<.05
		* * * * * * * * * * *				
All E's	842	57.95 7.40	59.87 7.17	1.92	4.42	.0001
All C's	291	58.42 7.23	58.33 7.09	-.09	.31	NS

the overall mean on the posttest. The overall results indicate general positive movement by the experimental groups and no change by the comparisons. This impression is clearly conveyed by the combined scores which show an overall experimental mean increase of +1.92 ($P = < .001$) and a combined decrease for controls of -.09. There were some differences by program types. Career programs showed the largest positive gains (an average of 2.58 points); Community Study was next (1.77), Service next (.63) and Outdoor Programs last (.30).

Table 4:8 shows a direct comparison between the six experimental/comparison pairs.

The direct comparison between experimental and comparison groups shows the mean gain scores of three experimental groups to be significantly greater than their comparisons, and a fourth with a non-significant advantage, and the last two to have a slightly larger decrease than its comparison. Career C and its control group both declined over the four-week interval between the pre and post tests with a difference between them that approached but fell short of the standard of statistical significance. Career C's pretest mean score was a full 4 points higher than its control, a difference which was reduced to 2.50 points on the posttest. This particular result suggests that a regression effect may have accounted for this deviation from the otherwise consistent pattern of experimental group advantage. As anticipated Outdoor D and Community Study E and its comparison group all registered decreases, a consistent pattern across nearly all the test results. Despite the sharp drop by Career C, the mean gain of the combined experimental groups was +1.39 while the combined controls declined by -.09. This difference was highly significant statistically ($P = < .001$).

Table 4:8

Social and Personal Responsibility Scale
Pre-Post Mean Gain Score Comparisons
For Experimental and Comparison Groups

	(N)	Pre-Post Mean Gain	t-value	P=(1-tail)
Service D	(62)	2.89	2.25	.013
Comp. 1	(77)	.42		
Outdoor C	(25)	.71	.81	NS
Comp. 2	(38)	-.34		
Outdoor D & C. Study E	(49)	-1.01	.19	NS
Comp. 3	(43)	-1.09		
Career C	(19)	-1.84	1.61	<.059
Comp. 4	(45)	- .88		
C. Study B	(38)	2.63	2.34	<.013
Comp. 5	(15)	-1.20		
C. Study D	(84)	1.62	1.67	.031
Comp. 6	(73)	-1.05		
Above E's	(327)	1.39	3.18	<.001
Above C's	(201)	- .09		

The results from the total SPRS scale suggest that participation in an experiential learning program does tend to have a positive effect on social and personal responsibility. An analysis of the subscales of the test was undertaken to help identify the dimensions of this impact.

SPRS Subscales. The Social and Personal Responsibility Scale contained five subscales as identified earlier. Table 4:9 lists the means and mean gains for each of the subscales for each program.

The data reported in Table 4:9 indicate that the students did not respond uniformly to all sections of the scale. Nine experimental groups showed positive change on each subscale. Positive change for two groups (Service D and Career A) was substantial and statistically significant on four subscales, four other experimental programs (Service A, Career G & H, & Community Study C) increased significantly on three subscales and eight other experimental programs (Outdoor A & B, Career B,D, & F and Community Study A, B & D) increased significantly on two subscales. There were only two instances of significant positive change among the comparison groups, both on the Competence subscale. That there was general upward movement among the experimental groups is reflected in the combined totals which showed significant positive change on all five subscales.

The precise pattern of change was less obvious. The subscales showing the most frequent change among the experimental groups were Competence and Performance, but the comparison groups also tended to increase on these subscales. Twenty-two of the 27 experimental groups increased on Competence with seven showing a statistically significant increase. Four of the comparison groups also increased on the Competence subscale with two declining (one significantly). A similar pattern was evident for the Performance subscale, with 19 experimental groups

Table 4:9

Subscales of Social and Personal Responsibility Scale
Pre-Post Means and Mean Gains for Each Experimental and Comparison Group

		DUTY		SOC. WELFARE		EFFICACY		COMPETENCE		PERFORMANCE	
	(N)	Pre Post	Mean Gain	Pre Post	Mean Gain	Pre Post	Mean Gain	Pre Post	Mean Gain	Pre Post	Mean Gain
Service A	(66)	13.32		11.39	.60**	10.97	.17	8.29	.28*	11.45	
		13.90	.59***	11.99		11.14		8.57		11.59	.14
Service B	(12)	13.33	.00	12.42	-.17	12.00	-.91**	8.67	.17	11.58	-.08
		13.33		12.25		11.08		8.83		11.50	
Service C	(40)	14.56	-.10	12.95	-.75***	12.38	-.30	9.15	.13	12.95	.00
		14.46		12.20		12.08		9.28		12.95	
Service D	(65)	13.99	.55***	12.62	.55**	11.63	.48**	8.89	.63***	12.33	.36
		14.44		13.17		12.11		9.52		12.69	
Service E	(24)	14.71	-.63	13.79	-.08	11.67	-.08	9.88	-.13	13.21	-.13
		14.08		13.71		11.58		9.75		13.08	
Service F	(28)	13.25	.11	11.68	-.18	10.89	.43**	8.26	.05	12.79	.11*
		13.36		11.50		11.32		8.32		17.90	
Service G	(20)	14.05	.30	12.35	-.05	11.50	.80***	8.15	.35	11.38	.38
		14.35		12.30		12.30		8.50		11.76	
Service H	(12)	14.25	0	12.36	1.18**	11.50	-.67*	8.58	.34	11.91	.36
		14.25		13.55		10.83		8.92		12.27	
Service I	(86)	13.76	.17	12.44	-.25*	11.37	.14	8.72	.13	12.13	.73***
		13.93		12.18		11.51		8.85		12.86	
Service J	(7)	13.43	.71*	11.67	.50	12.00	.71*	9.86	.50	12.14	-.86
		14.14		12.17		12.71		10.36		11.29	
Comp. 1	(78)	14.18	.15	12.03	-.26	11.26	-.01	8.30	.35**	12.11	-.10
		14.33		11.77		11.25		8.65		11.25	
Outdoor A	(56)	14.18	0	11.56	.30	10.71	.60***	8.38	.57***	11.48	.23*
		14.18		11.85		11.31		8.95		11.71	

Table 4:9 (cont.)

	(N)	DUTY Pre Post	 Mean Gain	SOC. WELFARE Pre Post	 Mean Gain	EFFICACY Pre Post	 Mean Gain	COMPETENCE Pre Post	 Mean Gain	PERFORMANCE Pre Post	 Mean Gain
Outdoor B	(25)	13.60 13.72	.12	11.96 12.54	.58**	11.72 11.08	-.36	9.25 9.50	.25	11.46 12.21	.75***
Outdoor C	(36)	13.31 13.69	.39	11.43 11.73	.30	11.36 11.17	-.19	8.25 8.89	.64**	11.94 11.86	-.09
Outdoor D	(22)	13.27 12.77	-.50	12.35 11.35	-1.00**	11.91 11.22	-.70*	8.83 8.44	-.39	11.22 11.09	-.13
Outdoor Comp. 2	(38)	14.23 14.21	.02	12.46 11.62	-.85***	11.49 11.82	.33	8.82 8.92	.10	11.97 12.03	.05
Outdoor Comp 3	(47)	13.26 12.98	-.28	11.88 11.79	-.08	11.88 11.40	-.48	8.86 8.88	.02	11.07 11.11	.04
Career A	(30)	14.13 14.60	.47**	12.63 12.70	.07	11.60 12.17	.57**	9.21 10.14	.93***	12.52 13.41	.90***
Career B	(10)	13.40 14.40	.60	13.11 13.33	.22	11.11 12.00	.89*	9.00 9.90	.90*	12.30 12.70	.40
Career C	(25)	14.40 13.76	-.64*	12.16 11.36	-.80**	11.71 11.75	.24*	9.92 9.44	-.48	13.68 12.88	-.80***
Career D	(13)	12.40 13.60	1.20***	11.60 12.00	.40	11.17 12.50	-1.35***	8.80 9.20	.40	12.75 12.88	-.13
Career E	(52)	13.54 13.79	.25	12.07 11.95	-.13	10.94 10.80	-.14	8.44 8.50	.06	11.79 11.89	.09
Career F	(35)	13.46 13.86	.40**	11.86 12.18	-.32*	11.33 11.45	.12	8.67 8.97	.30	11.94 12.34	.39**
Career G	(37)	13.78 14.59	.31***	11.81 12.11	.30	11.11 11.37	.26***	8.32 9.00	.68	11.68 12.70	1.03***
Career H	(16)	14.00 14.50	.50**	11.60 12.27	.67	11.07 11.21	.14	8.94 9.13	.19	11.53 12.60	1.0 **

Table 4:9 (cont.)

	(N)	DUTY Pre Post	 Mean Gain	SOC. WELFARE Pre Post	 Mean Gain	EFFICACY Pre Post	 Mean Gain	COMPETENCE Pre Post	 Mean Gain	PERFORMANCE Pre Post	 Mean Gain
Career Comp. 4	(50)	14.08 13.90	-.18	11.31 11.31	.00	11.14 11.06	-.08	8.48 8.85	.38**	11.78 11.62	.16
C.Study A	(21)	13.10 13.19	.10	11.59 11.96	.36	10.70 11.70	1.00***	8.23 8.18	.05	11.30 11.90	.60*
C.Study B	(48)	13.69 14.35	.67***	12.25 12.60	.35	11.04 11.71	.67**	8.41 8.73	.32	12.29 12.52	.23
C.Study C	(28)	12.64 13.21	.57**	11.00 10.56	-.44	10.43 10.86	.43**	8.48 7.93	-.56**	10.89 11.33	.44**
C.Study D	(81)	14.32 14.49	.18	12.44 12.37	-.12	11.72 12.28	.56***	8.65 9.18	.53***	12.37 12.64	.27
C.Study E	(22)	13.27 12.77	-.50**	12.35 11.35	-1.00***	11.91 11.22	-.70	8.83 8.44	-.39	11.22 11.09	-.13**
C.Study Comp. 5	(16)	13.38 13.19	-.19	11.47 10.71	-.77***	11.00 10.31	-.69**	8.53 8.18	-.35	12.07 11.60	-.47
C.Study Comp. 6	(80)	14.90 14.45	-.45***	11.94 11.39	-.18	11.79 11.86	.08	9.43 9.07	-.36**	13.43 12.96	-.46**
All E's	(925)	13.74 13.97	.21***	12.13 12.25	.12**	11.36 11.54	.18***	8.69 8.96	.25***	11.99 12.30	.31***
All C's	(320)	14.06 14.12	.06	11.89 11.71	-.18**	11.45 11.38	-.07	8.69 8.60	.09	12.11 12.16	.05

*Significant at less than .10 (1-tailed test)

**Significant at less than .05 (1-tailed test)

***Significant at less than .01 (1-tailed test) (eight at a level of statistical significance) and three comparison groups showing an increase. The Efficacy and Duty subscales showed approximately the same pattern though showed less positive changes than did Competence and Performance. In both cases, 18 experimental groups increased while two comparison groups increased on Duty and one comparison group increased on Efficacy. The Social Welfare scale showed a pattern of change substantially different from any of the other subscales. The experimental groups tended to show less positive change -- only 13 of the 27 groups increased. However all the comparison groups declined or remained the same (of the five that decreased, two were at a statistically significant level). These complex findings are summarized below in Figure 1.

Figure 1

Pattern of Change on SPRS Subscale for Expermentals and Comparison

Subscales of SPRS	Increase	Decrease	Remained the Same
Duty	18 E's (9 sign) 2 C's	6 E's 3 C's (1 sign)	3 E's
Social Welfare	13 E's (4 sign)	14 E's (4 sign) 5 C's (2 sign)	1 C
Efficacy	18 E's (11 sign) 1 C	9 E's (2 sign) 5 C's (1 sign)	
Competence	22 E's (7 sign) 4 C's	5 E's (1 sign) 2 C's (1 sign)	
Performance	19 E's (8 sign) 3 C's	7 E's 3 C's (1 sign)	1 E

Overall, the strongest changes were toward taking responsible action as opposed to having more responsible attitudes; and toward having more personally responsible attitudes as opposed to socially responsible attitudes. These findings lend support to those theorists (White, 1963; Mitchell, 1975) who argue that the need to make significant contributions to the environment in which s/he lives is one of the basic needs of the adolescents. According to this view of adolescence, being told that they are held in high esteem is not enough; the proof is in the doing. The results show that experiential programs can provide for youth's need to contribute to the significant events in their world.

Further, the larger, more consistent increases in subscales measuring action, (Competence and Performance) as opposed to those measuring attitude (Efficacy, Duty and Social Welfare), suggest that changes in behavior may lead to changes in attitude. Though these findings are merely suggestive, it does point to the possibility that the traditional model in citizenship education, that developing proper attitudes about personal and social obligations will lead to responsible behavior, may need revision.

Though students in the experimental groups register less positive change on the attitude subscales overall, there were some differences within them. Students showed more positive change on those measuring personal attitudes, Duty and Efficacy, and less on the one measuring social attitudes, Social Welfare. As reported earlier, the Career Programs did show the largest increases on the Social and Personal Responsibility Scales, and these increases did tend to be on items measuring personal responsibility. The two programs type more likely to influence Social Attitudes, Community Study and Service, showed less change overall. It does appear that attitudes regarding the needs and welfare of others were less influenced by the comparison programs, including those that had this outcome as a deliberate aim.

Career Exploration Scale

The third dimension of social development analyzed in this study was that of involvement in career exploration and planning. A general scale with two subscales was used to test this dimension. The results from the overall scale are reported in Table 4:10 and Table 4:11.

Table 4:10 reveals that 24 of 27 experimental groups registered a positive gain on the Career Exploration Scale, 13 at a level of statistical significance. Increases were also registered by the six comparison groups, with two at a statistically significant level. The combined change scores for both experimental and comparison groups were highly significant.

Some interesting differences emerge from examining individual program scores. The highest pretest mean was attained by Service J (12-graders in an independent school). Its score of 63.06 was higher than any other group attained even on the posttest. The lowest mean score (37.26) was registered by Control 4, a group of suburban junior high students. The next lowest mean scores (37.50, 38, 38.21, and 38.39) were registered by either young students (9-10th graders) or low-income youth. It does appear that active planning and exploring of careers is related to both age and income--with older and more affluent students having the advantage.

The largest pre-post mean gain (12.62) was registered by Career B. These students were in a program specifically directed at interesting and involving low-income, minority students in medical careers. The second largest mean gain (10.28) was also in a career internship program (Career H) in which students spend full time for a semester pursuing a career or vocational interest. The third largest mean gain, however, (7.41) was registered by Service D which stressed volunteer service and had no deliberate focus on careers. But overall,

Table 4:10

Career Exploration Scale[a] Pre-Post Means and Mean Gains for Each Experimental and Comparison Group

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service A	66	46.86 11.49	51.44 12.79	4.58	2.75	.004
Service B	15	43.61 17.65	46.61 14.66	3.01	.71	NS
Service C	41	48.20 12.94	52.12 12.77	3.92	1.92	.031
Service D	65	44.85 13.12	52.26 14.71	7.41	5.34	<.001
Service E*	27	49.68 12.19	52.24 14.29	2.56	.98	<.10
Service F	31	39.96 8.18	44.21 13.10	4.26	2.29	.02
Service G	20	38.00 9.74	39.20 11.53	1.20	.58	NS
Service H	12	43.92 9.76	42.10 9.74	-1.82	.47	NS
Service I	107	40.22 13.60	42.08 15.30	1.86	1.82	.04
Service J	7	63.00 6.06	63.06 13.19	-4.06	1.10	NS
Comp. #1	88	48.41 13.33	51.62 14.04	3.22	2.62	.005
		* * * * *	* * * * *	* *		
Outdoor A	64	41.77 11.05	42.50 12.18	.73	.67	NS
Outdoor B	25	44.14 8.03	47.84 9.85	3.7	2.31	.02
Outdoor C	37	51.05 14.04	50.76 12.04	- .29	.17	NS
Outdoor D	26	38.39 8.54	42.25 11.54	3.87	1.33	.10
Comp. #2	39	52.97 10.68	55.48 11.89	2.50	1.40	<.084
Comp. #3	49	44.01 10.82	46.24 12.10	2.16	1.15	NS
		* * * * *	* * * * *	* *		

[a] The highest mean score possible was 80.

Table 4:10 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Career A	33	53.85 13.74	56.56 12.18	2.71	1.18	NS
Career B	11	40.98 16.32	53.60 18.60	12.62	3.71	.002
Career C	25	47.60 14.14	48.04 12.25	.44	.19	NS
Career D	10	44.31 8.52	50.07 9.06	5.76	2.03	.04
Career E	55	46.49 11.44	46.54 10.68	.052	.03	NS
Career F	36	46.39 13.09	51.51 12.43	5.12	2.53	.01
Career G	40	48.18 13.28	51.20 10.74	3.01	1.88	.03
Career H	16	50.75 13.70	61.03 13.12	10.28	3.03	NS
Comp. #4	56	44.57 12.81	45.10 13.10	.53	.31	NS
			* * * * * * * * * *			
C. Study A	23	38.21 14.63	42.95 14.55	4.74	2.54	.01
C. Study B	50	41.77 11.40	47.84 14.81	6.07	3.35	<.001
C. Study C	27	43.05 14.04	47.19 14.63	4.14	1.65	.06
C. Study D	94	49.05 12.87	50.14 12.44	1.09	.84	NS
C. Study E	27	49.68 13.68	52.24 12.31	2.56	.98	.17
Comp. #5	17	37.26 13.26	43.33 12.27	6.09	2.64	.01
Comp. #6	84	48.45 13.67	49.44 11.70	.99	.84	NS
			* * * * * * * * * *			
All E's	993	45.18 13.02	48.38 13.64	3.20	8.72	<.001
All C's	333	47.10 8.16	49.21 8.10	2.11	3.29	<.001

[a] The highest mean score possible was 80.

Table 4:11

Career Exploration Scale
Pre-Post Mean Gain Score Comparisons
For Experimental and Matched Comparison Groups

	(N)	Pre-Post Mean Gain	t-value	P=(1-tail)
Service D	(65)	7.41	2.26	<.012
Comp. 1	(88)	3.22		
Outdoor C	(37)	-.29	1.14	NS
Comp. 2	(39)	2.50		
Outdoor D & C. Study E	(56)	5.28	1.45	.093
Comp. 3	(49)	2.16		
Career C	(22)	.68	.05	NS
Comp. 4	(56)	.53		
C. Study B	(40)	6.56	.17	NS
Comp. 5	(17)	6.08		
C. Study D	(94)	1.09	.05	NS
Comp. 6	(84)	.99		
Above E's	(366)	3.33	1.3^2	<.09
Above C's	(333)	2.11		

the career internship program did have the largest increases, averaging 5.00 pre-post mean gain. Community Study Programs, which in two cases did have a deliberate focus on careers showed the next largest increases with an average of 3.12 pre-post mean gain. Community Service programs registered an overall mean gain of 2.69, and outdoor adventure programs increased 2.00 overall.

Table 4:11 again analyzes the general program findings through an examination of the experimental versus control pairings.

Table 4:11 reinforces the impression from the general program table that there was a general upward trend for students in all programs with students in experiential programs gaining only slightly more than their counterparts in regular school programs. Although the advantage for the combined experimental groups over the combined comparison groups could be considered a trend, nearly all of the advantage was accounted for by Service D and Outdoor D/ Community Study E.

The Career Exploration Scale contains two subscales. The first measures Career Action, or the degree to which students have been actively engaged in exploring careers ("observed," "tried out"). The second asks about the kind and extent of information they have gained about a career field ("learned the employment demand"). A hypothesis of this study was that students in experiential programs would show the largest gain on the action-oriented items and the comparison groups on information. Data related to this hypotheses are reported in Tables 4:12 and 4:13.

The data reported in Table 4:12 does support the hypothesis that students in experiential programs will show their strongest increase in career action and comparison groups in information-gathering about careers. All of the experimental groups gained on this subscale, with the gains of 16 of them

Table 4:12

Career Action and Career Information Subscales
Pre-Post Means and Mean Gains for Each Experimental and Control Group

		Action		Information	
	N	Pre-Post[a]	Mean Gain	Pre-Post[b]	Mean Gain
Service A	66	16.85	1.64**	22.80	1.52*
		18.49		24.32	
Service B	15	16.20	1.60	16.00	3.00
		17.80		19.00	
Service C	41	17.71	1.32*	22.44	1.53*
		19.02		23.95	
Service D	65	16.92	3.40***	20.37	2.41***
		20.32		22.78	
Service E	25	18.48	2.04*	23.11	-.39
		20.52		22.73	
Service F	31	14.29	2.81**	18.68	.64
		17.10		19.32	
Service G	20	14.55	2.00**	16.80	-.50
		16.55		16.30	
Service H	12	16.33	.08	18.90	-.20
		16.42		18.70	
Service I	99	14.95	1.36*	19.05	-.29
		16.31		18.76	
Service J	6	21.50	-2.83	28.67	-3.17*
		24.33		25.50	
Comp. #1	86	18.05	.61	23.10	1.61***
		18.65		24.72	

Table 4:12 (continued)

		Action		Information	
	N	Pre-Post	Mean Gain	Pre-Post	Mean Gain
Outdoor A	61	14.80	.44	19.81	.71
		15.25		20.52	
Outdoor B	25	15.72	2.89***	20.67	.54
		18.60		21.21	
Outdoor C	35	17.94	1.34**	24.17	-1.22*
		19.29		22.94	
Outdoor D	25	13.92	1.48**	17.92	1.68*
		15.40		19.60	
Comp. #2	38	19.82	.55	24.33	1.05
		20.37		25.39	
Comp. #3	44	16.45	-.11	19.82	1.67*
		16.34		21.49	
Career A	33	21.58	.32	23.34	1.67*
		21.90		24.91	
Career B	11	13.80	6.70***	21.00	2.90**
		20.50		23.90	
Career C	23	18.04	1.04	22.60	1.24
		19.09		21.36	
Career D	9	16.56	3.44**	20.11	1.00
		20.00		21.11	
Career E	54	18.11	.20	21.37	.13
		18.32		21.50	
Career F	35	18.34	.71	20.65	3.11***
		19.06		23.76	

Table 4:12 (continued)

		Action		Information	
	N	Pre-Post	Mean Gain	Pre-Post	Mean Gain
Career G	39	18.28	.64	22.13	2.13***
		18.92		24.25	
Career H	16	19.50	6.00 ***	22.00	3.87***
		25.50		25.87	
Comp. #4	50	16.38	.14	20.65	.20
		16.52		20.85	
C. Study A	19	14.95	1.10	16.96	2.00*
		16.05		18.96	
C. Study B	46	16.33	2.78***	19.19	2.5***
		19.11		21.69	
C. Study C	28	15.39	2.42**	20.20	1.08
		17.82		21.28	
C. Study D	92	18.00	.79	23.22	-.05
		18.79		23.16	
C. Study E	27	16.41	2.07**	21.93	3.14***
		18.48		25.07	
Comp. #5	16	15.25	1.00	16.18	4.06***
		16.25		20.24	
Comp. #6	81	16.08	.26	23.56	.49
		17.06		24.05	
All E's	952	16.80	1.92***	20.78	1.20***
		18.72		21.98	
All C's	315	17.31	.35	22.13	1.16***
		17.67		23.30	

[a] The highest mean score possible was 30

[b] The highest mean score possible was 35

*Significant at less than .10 (1-tail)
**Significant at less than .05 (1-tail)
***Significant at less than .01 (1-tail)

Table 4:13

Career Action and Career Information Subscales
Pre-Post Mean Gain Score Comparisons
For Experimental and Control Groups

		Career Action		Career Information	
	N	Pre-Post Mean Gain	Difference P=(1-tail)	Pre-Post Mean Gain	Difference P=(1-tail)
Service D	65	3.40	.004	2.41	NS
Comp. #1	72	.51		1.66	
Outdoor C	35	.22	NS	-.18	.045
Comp. #2	38	.09		.15	
Outdoor D & C. Study E	52	1.79	<.031	2.46	NS
Comp. #3	44	-.11		1.67	
Career C	22	.26	NS	-.21	NS
Comp. #4	50	.02		.02	
C. Study B	37	.48	NS	.38	NS
Comp. #5	17	.17		.57	
C. Study D	92	.79	NS	-.05	NS
Comp. #6	81	.26		.49	
Above E's	343	1.68	<.002	1.13	NS
Above C's	315	.35		1.17	

being at the level of significance or trend. The combined mean gain score for experimental groups on the Action subscale was .72 higher than on the information subscale, even though the latter scale contained one more question giving it a higher potential for gain. The combined experimental groups also showed a statistically significant increase (1.20) on the career information subscale. Twenty of the experimental groups increased, with 14 showing a gain at the level of statistical significance or trend. The pattern was reversed for the comparison groups. Four of the comparison groups increased on the career action subscale and two declined. The combined comparisons group showed a very small, non-significant increase on career action. However, this was not the case with career information. All the comparison groups increased on this scale, two significantly so. The combined comparison groups showed a significant increase of 1.16 points, just slightly less than that of the combined experimental groups.

This differential performance on action and information-gathering is explored more precisely in Table 4:13. Though the experimental/control pairs contained only one of the high-change experimental groups (Service D), their comparative results do support the hypothesis that the advantage for the experimental groups on the total Career Scale accrued from the items relating to career action. All experimental groups showed higher mean gains than their controls on the Action subscale and four of the six comparison groups showed greater gains on the Information subscale. Combined, the experimental groups' advantage on Action was statistically significant while there was no significant difference between the combined groups on Information.

Data from the Career Exploration Scale lend support to the hypothesis that experiential learning programs do have a positive impact on students' involvement in career exploration. The data further suggest that information about careers may be effectively gained through either classroom instruction or direct participation, but that programs featuring the latter go beyond information to direct involvement in potential career fields. Clearly, the students in programs deliberately designed to increase their career planning and exploration skills did show the most positive results. But merely having that as the stated objective is not sufficient in that two of the eight career internship programs registered almost no increase on this scale. It is also noteworthy though that those programs with almost no organized and explicit focus on careers--service-learning and community study/political action--produced substantial change as well. It may be that because young people are so concerned with forging an identity, which includes a career identity, that they actively seek such "data" in their field experiences. The consistently positive increases on the career action subscale for experimental groups also indicates that participation with adults, and in adult roles, without a formal curriculum, has a strong impact on students' career planning.

Attitude Change--Semantic Differentials

Three semantic differentials were administered to assess attitudes and changes in attitudes toward adults, toward being active in the community and toward the kinds of persons the students encountered in their off-campus experiences.

Adults. A common critique of modern socialization practices is that young people are locked in an adolescent ghetto separated from meaningful interaction with adults. The implicit assumption is that separation breeds suspicion, if not hostility, and that greater contact would promote more positive attitudes. To test this assumption, students were administered a semantic differential on which they were asked to rate adults on word pairs such as boring-interesting, kind-mean, smart-dumb, friendly-unfriendly. Pre-post results are reported in Tables 4:14 and 4:15.

It would appear, from the above, that the adolescents do not automatically think more highly of adults merely because they've moved a few weeks or months closer to that status themselves. It depends upon what they're doing, and remaining in a classroom is apparently not an experience which raises their esteem of adults. Five of the six control groups evaluated adults more negatively at the end of the test period. Combined, their more negative assessment was statistically significant. The pre-post change for the experimental groups was substantially more positive. Students in 22 of the 27 groups evaluated adults more highly, 13 at a statistically significant level. Combined, the experimental groups rated adults more positively at a highly significant statistical level ($P= < .001$).

There were differences among the experimental groups that bear special mention. One is that the short-term (4-week) groups showed less change. In two cases, Service I and Community Study E, declined over the 4-week period. This was not the case, though, in the short-term outdoor programs--Outdoor A and B, where both showed a positive change. This may be explained by the power of highly challenging group experiences in which adults and adolescents undergo stress and hardship together. Secondly, there was at least one instance of substantial (2.5 mean gain points or better) and one of no change in each program category. This suggests again that it is the dynamics within a specific program, and not its genotype, that makes a difference. This is most dramatically demonstrated by the mean change of Service B which declined from the one of the highest mean evaluation of adults (41.88) to the second

Table 4:14

Attitude Toward Adults
Pre-Post Means and Mean Gains for Each Experimental and Comparison Group

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service A	67	40.21 6.75	41.97 6.25	1.76	2.23	.015
Service B	16	41.88 6.74	37.69 8.00	-4.19	1.97	.034
Service C	40	41.85 6.13	42.28 7.09	.43	.43	NS
Service D	64	39.47 7.91	42.34 6.95	2.88	2.48	.008
Service E	24	42.33 7.1	43.50 6.19	1.17	1.05	NS
Service F	33	39.29 6.33	42.97 6.36	3.79	2.89	.004
Service G	19	42.21 8.79	42.79 7.88	.58	.23	NS
Service H	11	40.73 6.62	40.09 7.44	-.64	.36	NS
Service I	100	41.36 7.20	40.28 8.76	-1.08	1.24	NS
Service J	7	37.00 6.75	39.14 6.75	2.14	.65	NS
Service Comp. 1	87	42.05 5.97	41.06 6.05	-.99	1.45	.08

* * * * * * * * * *

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Outdoor A	55	38.94 9.49	40.20 8.06	1.24	.97	NS
Outdoor B	25	38.68 5.34	41.48 6.60	2.80	2.24	.02
Outdoor C	37	38.27	40.78	2.51	3.48	.001
Outdoor D	25	41.48 8.20	44.48 6.91	3.00	1.99	.02

Table 4:14 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Outdoor Comp. 2	39	40.36 8.68	40.59 6.56	.23	.24	NS
Outdoor Comp. 3	48	42.06 7.04	41.77 8.21	-.29	.25	NS
			* * * * * * * * * *			
Career A	33	40.33 8.08	41.70 7.62	1.36	.96	NS
Career B	11	41.36 7.66	45.00 6.94	3.64	1.80	.051
Career C	24	38.50 5.85	38.58 8.27	.08	.08	NS
Career D	7	34.00 9.75	37.57 9.27	3.57	.94	NS
Career E	55	38.55 6.58	41.51 6.82	2.96	3.00	.002
Career F	34	38.27 5.93	38.50 1.02	.24	.23	NS
Career G	38	38.74 5.54	40.55 6.17	1.67	2.91	.003
Career H	15	39.73 7.32	39.80 6.92	.07	.02	NS
Career Comp. 4	47	39.98 8.65	37.40 8.98	-2.58	2.32	.041
			* * * * * * * * * *			
C. Study A	17	43.29 6.31	42.89 9.59	-.41	.71	NS
C. Study B	50	38.06 7.39	40.54 7.47	2.48	2.05	.023
C. Study C	29	36.31 5.96	39.22 6.76	2.91	1.84	.05
C. Study D	88	37.00 6.13	40.19 7.28	3.19	3.78	.001

Table 4:14 (cont.)

	N	Pretest Mean/sd	Postest Mean/sd	Mean Gain	t-value	P=(1-tail)
C. Study E	30	43.60 5.76	42.77 6.31	-.83	.62	NS
C. Study Comp. 5	16	39.44 4.52	37.44 4.79	-2.00	2.27	.010
C. Study Comp. 6	80	41.98 6.11	41.53 6.32	-.45	.58	NS
ALL E's	949	39.60 7.18	41.05 7.45	1.45	5.66	.0001
ALL C's	317	41.38 6.94	40.65 7.05	-.74	1.90	.029

lowest mean score recorded by any group pre or post (37.69). While it's possible that the cause may have been a reactive effect of the testing, it is at least intriguing to note that these students were all engaged as peer counselors in a shelter for runaway teenagers. There they encountered young persons who generally had had unhappy experiences with adults. It is reasonable to hypothesize that the explanation for their lowered opinion of adults lies in the nature of their field experience.

The differences between the pre-post attitudes for experimental and control groups is examined more directly in Table 4:15. The difference between the experimentals and comparisons was highly significant [illegible].0001). The conclusion is even more clear that participation with adults, in adult roles, had a significant positive impact on their evaluation by adolescents.

Being Active in the Community.

A second hypothesized effect of direct participation in the community was that the experience would lead students to value such activity more highly and increase the likelihood of their so participating in the future. The first part of the hypothesis was tested through an evaluative semantic differential with pairs such as smart-dumb, useless-useful, boring-interesting. The second was tested by a single continuum from "Something I will do" to "Something I won't do." The results are reported in Tables 4:16 to 4:19.

Table 4:16 reveals that at the time of the pretest students in experiential classes valued being active in the community less than did students in traditional classes, and that by the time of the posttest this was reversed, with the comparisons declining and the experimentals increasing. The changes were nearly identical in magnitude (though opposite in direction) and both were statistically significant. This is somewhat surprising in that one might have expected the service and community study programs especially to

Table 4:15

Attitude Toward Adults
Pre-Post Mean Gain Score Comparisons for Experimental and Comparison Groups

	N	Pre-Post Mean Gain	t-value	P= (1-tail)
Service D	(64)	2.88	3.04	<.002
Comp. #1	(87)	-.99		
Outdoor C	(37)	2.51	1.89	.032
Comp. 2	(39)	.23		
Outdoor D & C. Study E	(56)	2.14	1.93	.028
Comp. 3	(48)	-.29		
Career C	(24)	.08	1.91	< .031
Comp. 4	(47)	-2.58		
C. Study B	(50)	2.48	3.07	< .002
Comp. 5	(16)	-2.00		
C. Study D	(88)	3.19	3.16	<.001
Comp. 6	(80)	-.45		
Above E's	(279)	2.63	5.20	<.0001
Above C's	(291)	-.52		

attract students who had an unusually high regard for community participation. That this was not the case suggests that this was probably not a salient factor in their choosing a community-based program.

On the level of individual programs, 20 of the 27 experimental groups gained and all comparison groups declined. One experimental group (Service B again) and two comparison groups showed a large and significant decline. Nonetheless, the clearest impression from the data in Table 4:16 remained one of general increase by experimentals and general decline by comparisons, an impression further strengthened by the direct comparisons reported in Table 4:17.

Table 4:18 shows that five of the six experimental groups increased in their evaluation of being active in the community while all their controls decreased. The difference was statistically significant in four of the six cases and in combination. It must further be noted that for four of the six comparison groups (1, 2 and 5, 6) the value and importance of community participation was a deliberate emphasis of the in-school course. The implication is that participation in experiential learning programs does tend to increase students' evaluation of the idea of being active in the community, and that mere exhortations to do so does not.

Whether students' evaluation of being active in the community carries over to (at least reported) inclination to actually do it is examined in Table 4:18. This table reports results from one test item which asked students to place themselves on a continuum from "something I will do" to "something I won't do" in relation to being active in the community. Since this issue involves only one question with small pre-post changes, only the summary data is reported.

Tables 4:18 and 4:19 reveal, firstly, that secondary students rather strongly assert that they will be active in their communities. The experimental

Table 4:16

Being Active in the Community
Pre-Post Means and Mean Gains for Each Experimental
and Comparison Group

	N	Pretest Mean/sd	Postest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service A	60	39.26 5.74	40.36 5.52	1.12	1.36	.09
Service B	14	38.93 6.38	34.14 6.16	-4.79	2.07	.03
Service C	41	40.00 5.45	41.32 5.23	1.32	1.49	.07
Service D	62	38.13 7.95	40.97 5.92	2.84	2.80	.004
Service E	26	42.92 5.44	43.38 5.67	.46	.57	NS
Service F	32	34.66 5.85	37.88 6.26	3.22	2.18	.02
Service G	21	42.33 5.15	40.62 5.70	-1.71	1.58	.07
Service H	12	38.00 6.37	38.33 6.72	.33	.15	NS
Service I	99	37.90 6.19	37.96 7.11	.06	.12	NS
Service J	7	37.86 3.63	39.14 2.85	1.29	1.14	NS
Service Comp 1	86	38.42 5.27	37.72 6.38	-.70	1.12	NS
		* * * * * * * * * * *				
Outdoor A	60	37.30 7.31	37.35 6.16	.05	.06	NS
Outdoor B	25	36.60 5.18	38.80 5.21	2.20	2.65	.01
Outdoor C	37	36.10 5.79	37.89 7.88	1.78	1.87	.04
Outdoor D	27	36.41 7.14	36.67 6.55	.26	.19	NS

Table 4:16 (cont.)

	N	Pretest Mean/sd	Postest Mean/sd	Mean Gain	t-value	P=(1-tail)
Comp. 2	39	38.62 5.58	37.33 5.11	-1.29	1.37	.09
Comp. 3	44	38.59 6.57	37.46 5.65	-1.14	.99	NS
Career A	33	40.73 5.56	39.82 6.62	-.91	.97	NS
Career B	10	37.90 7.31	42.30 4.88	4.40	2.03	.037
Career C	20	37.30 7.31	37.75 6.16	.45	.06	NS
Career D	10	35.30 6.58	32.90 7.39	-2.4	.76	NS
Career E	52	34.88 6.70	35.27 6.96	.39	.41	NS
Career F	34	35.79 6.16	35.15 7.05	-.65	.74	NS
Career G	38	34.50 5.03	35.95 5.94	1.45	1.45	.08
Career H	13	36.85 8.75	35.92 7.14	-.92	.47	NS
Comp. 4	47	37.15 8.24	36.30 9.17	-.85	.73	NS
			* * * * * * * * * *			
C. Study A	18	38.06 6.10	39.33 7.74	1.28	.62	NS
C. Study B	49	39.29 5.54	41.51 5.49	2.22	2.45	.009
C. Study C	24	33.04 7.54	33.33 7.17	.29	.14	NS
C. Study D	88	38.76 5.91	40.15 5.72	1.39	2.03	.03

Table 4:16 (cont.)

	N	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
C. Study E	32	38.13 7.05	37.66 5.94	-.47	.37	NS
Comp. 5	15	37.53 7.34	32.47 7.63	-5.01	3.91	.001
Comp. 6	80	41.00 6.68	39.09 7.22	-1.91	3.05	.002
All E's	956	37.70 6.60	38.46 6.57	.76	3.57	$<.0001$
All C's	311	38.90 6.56	37.51 7.02	-1.38	3.81	$<.0001$

Table 4:17

Being Active in the Community
Pre-Post Mean Gain Score Comparisons for Experimental and Comparison Groups

	(N)	Pre-Post Mean Gain	t-value	P=(1-tail)
Service D.	(62)	2.84	3.14	.002
Compl 1	(86)	-.70		
Outdoor C	(37)	1.78	2.29	.013
Comp 2	(39)	-1.29		
Outdoor D and C. Study E		-.32	.70	NS
Group 3	(44)	-1.14		
Career C	(20)	.45		
Comp 4	(47)	-.85	.81	NS
C. Study B	(49)	2.22	4.96	.001
Comp 5	(17)	-5.07		
C. Study D	(88)	1.39	3.54	.0001
Comp 6	(80)	1.91		
Above E's	(356)	1.35	5.36	.0001
Above C's	(311)	1.38		

Table 4:18

Will/Won't Be Active in the Community
Pre-Post Mean Change for Combined Groups

	Pretest[a] Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=1-tail)
All E Groups (960)	5.07	5.19	.12	2.60	.004
	1.51	1.57			
All C Groups (318)	5.04	4.77	-.27	3.14	.001
	1.50	1.45			

Table 4:19

Will/Won't Be Active in the Community
Pre-Post Mean Gain Comparison Between Six Experimental Comparison Pairs

	Mean Gain	t-value	P=(1-tail)
Four E Groups (362)	.14	3.14	.001
Six C Groups (318)	-.27		

and comparisons groups were very similar at the time of the pretest. From these original positions, the experimental students increased and the comparison groups declined. A direct comparison between experimental and control groups showed the difference in change scores to be statistically significant.

In summary, the results from the semantic differential on being active in the community lend support to the hypothesis that students participating in experiential programs come to value such activity more highly and are more inclined to say it will be something they will do. Even more clear is the evidence supporting the reverse hypothesis that students in regular school programs will not show changes, even when that is a deliberate aim of the program.

Attitudes Toward Others. A further contention of the proponents of experiential education is that when students are involved with persons they don't ordinarily encounter they will come to value them more highly. This hypothesis was tested through a semantic differential, though through a somewhat more complicated process than used in the previous two tests. One semantic differential in the test battery had a blank heading to be filled in by the student taking the test. Students in experimental groups were either assigned a title by their instructor or were told to identify the type of person they expected to be working with in their community placement. Comparison students were either assigned a title or told to put in the kind of person they would expect to work with if they were in an off-campus program. For the posttest, students in the experimental groups were instructed to use the term given by the instructor or which named the kind of person they actually worked with in their off-campus experience. Only those cases in which the pre and post terms matched were used in the analysis of data.

Due to this somewhat confusing process, and the frequency with which students changed their minds from the time of the pretest to their actual involvement, the N's are considerably smaller, and to report individual program results would be meaningless or misleading. Thus the results are reported in two ways, and differently from the previous pattern. First experimental vs. comparison group attitudes (pre and post) are reported for all good cases whatever the specific referent(s) might have been. Career C and its comparison group are not included as they did not take this portion of the test. The purpose of this comparison was to shed light on the hypothesis that participation with new types of people will, in general, result in more favorable attitudes toward them. Secondly, attitude changes toward specific categories of people are reported.

The data in Table 4:20 very strongly suggest that community participation has a positive effect on students' evaluation of the people with whom they have been interacting. On this scale, each experimental group increased significantly while each of the comparison groups showed a decline. The difference was significant for the individual and for the combined comparisons.

Table 4:21 examines the nature of these attitude changes more directly by reporting how students in experimental programs reacted to their involvement with specific categories of people: old people, little kids, junior high kids, police, people in business, and hospitals. Results from experimental groups only are reported.

Table 4:21 shows that the students initially rated hospitals and little kids most highly, and junior high kids and police considerably less favorably. Old people and business persons fall in the middle. On the posttest the ratings of all these categories, except persons in business and hospitals had increased significantly. It may thus be concluded that, in general, student involvement with other people does result in a higher evaluation of them. The departure in relation to business persons and hospitals is interesting but difficult to

Table 4:20

Change in Attitudes Toward Others
Pre-Post Mean Changes for Five Experimental
and Comparison Group Pairs

	(N)	Mean Gain	t-value	P=(1-tail)
Service D	(58)	3.10	3.09	.001
Comp 1	(81)	-1.06		
Outdoor C	(35)	2.60	1.81	.037
Comp 4	(39)	- .17		
Outdoor D & C. Study E	(54)	1.04	1.72	.05
Comp 3	(41)	- .33		
C. Study B	(39)	2.33	2.15	.020
Comp 5	(16)	-1.00		
C. Study D	(84)	4.32	5.52	.0001
Comp 6	(81)	-1.59		
Above E's	(356)	1.31	5.36	.0001
Above C's	(311)	-1.38		

Table 4:21

Changes in Attitude Toward Selected Groups
Pre-Post Means and Mean Gains for Students
in Experiential Programs

Category	(N)	Pretest[a] Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Old People	(86)	50.80 6.78	53.29 6.93	2.49	3.24	.001
Little Kids	(106)	52.00 7.03	53.81 7.29	1.81	2.73	.001
Jr. H. Kids	(26)	44.88 8.45	47.31 5.30	2.42	1.75	.046
Business Persons	(14)	46.12 7.87	45.49 10.31	-.63	.56	NS
Police	(57)	45.56 7.41	47.58 7.57	2.02	2.12	.019
Hospitals	(36)	53.78 5.87	54.37 5.33	.61	.57	NS

[a] The highest mean possible was 63.

interpret. In the case of hospitals, the pretest score was very high, the highest rank term of all the possibilities. These were students who had internships in health careers and thus were apparently positively predisposed from the beginning. Surprisingly, their attitude toward hospitals became even more positive as a result of the internship experience.

The only term showing a small decrease was "people in business." The total number of students responding to this term was small--the pretest ratings were in the middle-range to begin with. It may be, though, that increased contact alone may not account for changed attitude and that the nature of the interaction must be considered. One would speculate that the students in business internships tended to be more observers than participators and this might account for the lack of change.

In summary, the data from this and the other two semantic differentials lend strong support to the hypothesis that participation in community-based educational programs does positively affect students' social attitudes.. Most particularly, the experimental groups showed more positive attitudes toward adults, toward being active in the community, and toward the people with whom they interacted most directly in their off-campus experience.

Summary

Tables 4:7 through 4:21 presented data regarding attitude change and social development. The first instrument examined attitudes and attitude change toward personal and social responsibility. There was some variation between programs on this scale, but the overall finding was that students in experiential programs did increase significantly on this scale both on their own pre-post scores and in comparison to students in regular school programs. Examination of the subscale scores showed that the strongest gains were made on competence and performance. The scales which most clearly discriminated between experimental and comparison groups were those relating to social welfare orientation and to sense of efficacy. Overall the strongest changes were toward taking responsible action as opposed to having more responsible attitudes, and toward having more personally responsible attitudes as opposed to socially responsible attitudes. On the Career Exploration scale, all experimental and comparison groups showed at least some increase with the strongest gains being made by the experimental groups. Analysis of the test's subscales revealed that the advantage of the experimental groups was largely a factor of their higher gains on the Action subscale of the instrument. Finally, an analysis of three semantic differentials showed significant positive change by experimental students and no change or negative change by comparisons on attitudes toward adults, toward being active in the community, and toward old people, little kids, junior high kids, hospitals and police. Attitudes toward business persons did not change.

The data reported in this section support the hypothesis that participation in experiential education programs does, or at least can, contribute to the social development of adolescents. The data also show that this is not a necessary and inevitable outcome of any and all experiential programs. While the general movement was toward positive change by experimental groups and no change by comparisons, there were almost always exceptions to the general trends suggesting there were dynamics operating within the programs that require closer analysis.

Intellectual Development

A third general hypothesis of the proponents of experiential learning is that participation in such programs has a positive effect on academic learning and intellectual development. These two elements are examined in this section.

Academic Learning

Because the programs varied widely both within and among themselves regarding particular academic objectives, it was not practical to directly test the academic learning assumption through any general test of facts or concepts. Instead, students were simply asked how much they felt they had learned in their experiential program compared to what they learned in "an average class in school." The question was only asked of students in experiential programs. Table 4:22 reports the results for all programs combined. Table 4:23 gives the results by individual program.

Clearly most students (62.3%) felt they had learned more in their experiential program than through the average classroom experience. Table 4:23 reports these data by individual program. The programs, for this table only, are ranked according to mean score.

The data in Table 4:23 shows that while all programs received high ratings there was a large spread (1.47 mean points) between the highest and lowest-ranked programs. An analysis of variance confirmed that the difference between groups on this item was significant (F=3.71, Sig. = .0001). Eleven groups showed an absolute mean level of between 4.0 ("learned more") and 5.0 ("learned much more"). The 16 groups with a mean score between 3.) ("learned about the same") and 4.0 ("learned more") were generally those which did not have a class or regular seminar as a part of their

Table 4:22

Amount Learned Compared to Average Class
Self Report By All Experimental Groups (N=938)

Category	Percent	Cumulative Percent
Much Less	2.5	2.5
Less	7.1	9.6
About the Same	17.7	27.3
More	40.5	67.8
Much More	32.2	100.0
Total	100.0	

Table 4:23

Amount Learned Compared to Average Class Experimental Programs Ranked by Mean Score

Program	(N)	Mean Score[a]
Service E	(15)	4.73
Career H	(10)	4.60
Career B	(12)	4.58
Outdoor B	(24)	4.46
Service D	(16)	4.44
Career D	(10)	4.40
Service A	(66)	4.17
Outdoor C	(37)	4.16
C. Study A	(27)	4.15
C. Study B	(50)	4.10
Service B	(13)	4.08
Comm.Study D	(83)	3.96
Career A	(30)	3.93
Service H	(11)	3.91
Career C	(20)	3.90
Career G	(35)	3.86
Service F	(31)	3.81
Outdoor D	(27)	3.80
Comm. Study E	(32	3.76
Outdoor A	(46)	3.72
C. Study C	(30)	3.67
Service J	(6)	3.67
Service I	(93)	3.64
Career F	(32)	3.46
Service C	(37)	3.46
Career E	(50)	3.32
Service G	(19)	3.26

[a] The highest mean score possible was 5.

program, or were short term experiences. The data indicate that students tend to feel they learn more from experiential programs than from their average school class, and that this is most pronounced when the program features both experience and reflection on the experience extended over at least 12 weeks.

On the opposite end of the continuum, eight of the 12 programs with the highest ratings involved students who might be expected to have a low opinion of regular classes. Four were composed of students in special alternatives for economically and educationally disadvantaged students, and four others involved students who had opted out of regular school for a full semester to participate in an outdoor-oriented or internship program.

Problem Solving

To test the hypothesis that experiential learning programs contribute to the intellectual development of secondary students, a problem-solving inventory was designed. As described in Chapter Three, this instrument presented students with an interpersonal problem and then led them through the basic steps in problem solving outlined by John Dewey (1910). Students' protocols were scored according to the number of alternatives suggested, the degree to which an alternative was selected or rejected on the basis of the consequences of the choice and, most importantly, the degree of empathy and complexity demonstrated in analyzing the problem.

Generation of Alternatives

The first aspect of problem solving to be tested was the ability and/or inclination to generate alternative solutions to the stimulus problem. This dimension was scored by adding together the relevant (and different) alternatives listed by the respondent. Data from the six experimental versus comparison pairs are reported in Table 4:24. The findings from each individual program add nothing essential to this data and are not reported on this dimension of problem solving.

Table 4:24 reveals two clear patterns that held true across all programs. The first is that there was not a wide difference between programs on the number of alternatives offered. The second is that nearly every program showed a decrease on the posttest. These findings suggest that this aspect of the inventory may have assessed test taking interest and motivation more than ability to generate alternatives. This inventory appeared at the end of the test battery and, especially on the posttest, students seemed little inclined to list numerous alternatives especially after they had listed at least one they considered a satisfactory solution to the problem. The combined experimental groups did slightly better than the combined comparisons but that was largely due to the comparisons dropping more sharply than the experimentals. The one exception was Service D, a fact to be commented on in a later paragraph.

This segment of the inventory while not conclusive in itself, did yield other information that was useful. First, in nearly half of the cases (47.8%), students selected other than their first alternative as their "best choice." This suggests that the request for further alternatives did help elicit the best thinking of students on the problems. It also confirms the common sense notion that one's first impulse does not always represent one's best judgment. The second major value of this segment was that the ideas expressed were often helpful in rating the protocol on its other dimensions.

Table 4:24

Problem Solving: Number of Alternatives
Pre-Post Means and Mean Gain Score Comparisons
for Experimental and Comparison Pairs

					Experimental/Control Diff.	
	(N)	Pretest Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service D	(63)	3.56	4.37	.82	5.05	<.0001
		.91	1.08			
Comp 1	(89)	3.60	3.44	-.16		
		.97	.94			
Outdoor C	(38)	4.65	4.22	-.43	1.01	NS
		1.07	1.20			
Comp 2	(39)	4.85	4.16	-.69		
		.93	.96			
Outdoor D &	(55)	4.23	3.50	-.72	4.05	.0001
C. Study E		1.18	1.07			
Comp 3	(46)	3.84	3.28	-.55		
		.99	1.03		3.23	.001
Career C	(19)	3.45	3.08	-.37	.29	NS
		1.05	1.10			
Comp 4	(49)	3.67	3.21	-.46		
		1.13	1.19			
C.Study B	(38)	3.74	3.60	-.14	1.06	NS
		1.23	.94			
Comp 5	(15)	3.90	4.03	.13		
		1.18	.83			
C Study D	(90)	3.68	3.58	-.10		
		1.06	1.01		.89	NS
Comp 6	(80)	3.60	3.63	.03		
		1.03	1.02		.86	NS
Above E's	(356)	3.86	3.72	-.14	1.36	.088
		1.14	1.15			
Above C's		3.81	3.54	-.27		
		1.09	1.05			

The second element of the Problem Solving Inventory, the Consequences Index, was intended to measure the degree to which respondents chose or rejected alternatives on the basis of the probable consequences of their actions. The assumption was that an important element in successfully dealing with problems is the consideration of consequences. Some evidence that this is so is that on the pretest there was a correlation of .55 between the score on consequences and that on empathy/complexity, a correlation higher than that between any other two scales in the test battery. Table 4:25 reports results for the consequences segment of the inventory in the same manner as that for alternatives. The mean scores are based on a possible total of 3.00. This score could be obtained by explaining both one's first choice and the rejection of another in terms of the consequences that would likely ensue from them.

Table 4:25 shows that there was generally little difference between pre-post scores in terms of the likelihood of the respondents explaining their choices in terms of consequences. Each group had a mean score of 2.0 or slightly above. This indicated that respondents tended to cite at least one consequence of their choices. With only a three point scale there was little possibility for significant increase. That there was at least no decrease does suggest that this factor was not strongly affected by motivation and that scoring was consistent. The students in one program, Service D, did show a significant increase both absolutely and statistically -- as they did on the Alternatives and the Empathy/Complexity indices. Students in this program were faced, in their community experiences, with situations similar to those of the stimulus stories, and were involved in problem solving as a central focus of their seminar sessions. Thus

Table 4:25

Problem Solving: Consequences
Pre-Post Means and Mean Gain Score Comparisons
For Experimental and Comparison Pairs

					Experimental/Control Diff.	
	(N)	Pretest Mean/sd	Postest Mean/sd	Mean Gain	t-value	P=(1-tail)
Service D	(62)	2.17	2.60	.43		
		.54	.47		3.50	<.001
Comp 1	(87)	2.23	2.29	.06		
		.58	.54			
Outdoor C	(37)	2.50	2.37	-.13		
		.49	.56		.93	NS
Comp 2	(39)	2.45	2.44	0.01		
		.44	.52			
Outdoor D &	(54)	2.28	2.23	-.05	.50	NS
C.Study E		.46	.61		3.74	.005
Comp 3	(46)	2.29	1.95	-.35		
		.55	.55			
Career C	(19)	2.00	1.95	-.05		
		.67	.72		.38	NS
Comp 4	(49)	2.00	2.02	.02		
		.62	.67			
C.Study B	(38)	2.14	2.19	.05		
		.61	.82		.95	NS
Comp 5	(15)	2.03	1.90	-.13		
		.52	.54			
C.Study D	(90)	2.00	2.00	.0	.08	NS
		.57	.61			
Comp 6		2.13	2.21	.08	1.06	NS
		.60	.56			
Above E's	(353)	2.16	2.20	.04		
		.58	.63			
Above C;s	(314)	2.20	2.18	-.02	1.15	NS
		.58	.59			

while their significant positive change was unique, so was the program unique in its emphasis on problem solving. Their increased scores indicate that deliberate practice in problem solving can increase that ability and in ways that may be detected by this instrument. At the least, this outcome suggests that the consequences index merits further attention and refinement.

Complexity/Empathy. The heart of the Problem Solving instrument is its Empathy/Complexity Index. As described in Chapter Three, this Index assesses the ability and/or inclination of the respondents to empathize with the key "other" in the story, the level of need upon which s/he focusses, and the complexity of thinking applied to the analysis of the problem. Each respondent's score is based on his/her entire protocol with primary focus on the response to the question, "What is the real problem involved in or lying behind the incident?"

The assumption "lying behind" this portion of the study was that students in experiential programs would demonstrate increased empathy and complexity of thinking. More particularly, it was hypothesized that such increases would be most pronounced in those programs where students were 1) directly confronted with interpersonal problems similar to those in the stimulus stories, and 2) where problem solving was a deliberate focus of accompanying seminar sessions. Students in programs where only one of the above elements was commonly present or where one or both were sporadically present were expected to show less positive change. Finally, it was hypothesized that students in regular classroom programs would not exhibit positive change.

The results are reported in Tables 4:26 and 4:27. To more directly test the assumptions of the study, and to make the data more easily interpretable, the programs are listed in order according to how nearly they approximated the conditions of having appropriate experiences (i.e., in an interpersonal, helping role) and a reflective component around those experiences. The first six programs listed in Category A featured both elements to a high degree. The next seven in Category B had one element fully and part of the other (e.g., seminar for all, interpersonal helping experiences for about half the students -- or vice versa). The third group of programs in Category C had a large measure of one of the key components and none of the other. The final six in Category D did not have either a seminar component of experiences similar to those in the stimulus stories. Unavoidably, there is some overlap between clusters, and the clearest distinctions are between the first 13 programs (Categories A & B) and the final 14 (Categories C & D). As this is the most defensible division, interpretation of the data was focused on it.

The data reported in Table 4:26 show that the Problem Solving Empathy/Complexity Index did clearly discriminate between experimental and comparison groups and between types of experiential programs. The pretest means were quite similar with 27 of the 33 experimental and comparison groups having means that rounded off to level 4 (conventional, stereotyped concern). The means of four groups rounded to level five (relational concern). One of these was made up of high ability, upper-middle income 12th graders (Comp 2) and the other three (Career C, Service H & J) of students in independent schools, mostly 12th graders who also were upper middle class in socio-economic status. Two groups had means that rounded off to level 3 (self-protective); both were groups of low-income inner city youth. One group (Career D) was composed of students with multiple educational and personal problems. On the posttest, seven groups had

Table 4:26
Problem Solving: Empathy/Complexity Index Pre-Post Means and Mean Gains for Each Experimental and Comparison Group

		Pretest[a] Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
A_1[b] Service D	(63)	3.94 .99	4.90 1.01	.96	8.23	.0001
A_2 Service E	(12)	4.38 .91	5.08 .97	.71	1.83	.041
A_3 Service J	(7)	5.50 .58	6.07 .98	.57	2.49	.023
A_4 Service F	(32)	3.63 .74	4.16 .88	.53	3.65	.001
A_5 Service A	(64)	4.48 .84	4.91 .98	.43	3.47	.001
A_6 Service B	(14)	4.18 .46	4.50 .83	.32	1.80	.044
B_1 C.Study B	(45)	3.69 1.16	4.27 .85	.58	3.38	.001
B_2 Outdoor C	(36)	4.26 1.03	4.67 .89	.41	2.09	.022
B_3 Career B	(9)	4.11 1.11	4.33 .79	.22	1.18	NS
B_4 Outdoor B	(24)	4.21 .94	4.42 1.15	.21	1.00	NS
B_5 C.Study C	(23)	3.30 1.68	3.46 1.50	.15	.46	NS
B_6 Service G	(20)	4.13 .76	4.20 .79	.07	.36	NS
B_7 Service H	(12)	4.54 .78	4.46 .54	-.08	.41	NS

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[a] The highest mean score possible was 7.

[b] The programs are grouped as follows:
A = students were in helping roles and had an intensive seminar;
B = students experienced one element fully and other partially;
C = students had one or the other;
D = students had neither.
Subnumbers are rough indicators of rank w/i group.

Table 4:26 (cont.)

		Pretest[a] Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
C_1 Career G	(39)	4.03 .82	4.32 .84	.29	2.32	.01
C_2 Career E	(56)	3.75 .98	4.04 1.74	.20	2.51	.001
C_3 C.Study D	(89)	3.96 1.05	4.21 1.09	.26	1.99	.024
C_4 C.Study A	(16)	3.84 .65	4.03	.19	1.10	NS
C_5 Career H	(16)	4.41 .94	4.59 1.04	.19	.66	NS
C_6Career F	(32)	3.92 1.14	4.02 .98	.09	.44	NS
C_7 Career A	(31)	4.28 .99	4.31 1.26	.03	.15	NS
C_8Service C	(37)	4.45 .85	4.44 .85	-.01	.08	NS
D_1 Outdoor D	(24)	4.08 .78	4.22 .83	.15	1.06	NS
D_2 Career D	(21)	3.27 .91	3.32 .68	.05	.15	NS
D_3 Outdoor A	(64)	4.02 1.10	3.96 1.13	-.07	.51	NS
D_4 C. Study E	(29)	2.33 .38	2.10 .49	-.29	1.48	.08
D_5 Service I	(89)	3.91 .73	3.62 .97	-.20	3.17	.001
D_6 Career C	(20)	4.58 1.35	4.15 1.30	-.43	2.43	.01
Comp 1	(87)	4.23 .94	3.99 1.10	-.24	2.05	.021
Comp 2	(39)	4.73 .88	4.59 .86	-.14	.5	NS
Comp 3	(46)	4.08 .78	3.74 .95	-.34	2.05	.023

Table 4:26 (cont.)

		Pretest[a] Mean/sd	Posttest Mean/sd	Mean Gain	t-value	P=(1-tail)
Comp 4	(49)	4.10 1.19	3.88 .95	-.22	1.56	.07
Comp 5	(14)	3.57 1.54	3.43 1.12	-.14	.38	NS
Comp 6	(78)	4.35 .93	4.52 .93	.17	1.60	.081
All E;s	(915)	4.04 1.00	4.26 1.08	.22	6.29	.0001
All C's	(313)	4.25 1.00	4.12 1.02	-.13	2.24	.013

mean scores that rounded to five (relational concern), six of these being experimental groups which had shown substantial increases and one group that rounded to six, Service J). In terms of mean changes, 21 of the 27 experimental groups increased, eight increasing at least one-third step (.32) on the seven point scale. Five of the six comparison groups decreased (two significantly) and one increased at .07 level of statistical significance.

The scale clearly discriminated between types of programs. In the A and B clusters, 12 of 13 programs moved in a positive direction, and eight were statistically significant. The A and B clusters included Service B which had consistently declined on most other scales in the test battery. In clusters C and D, five of the 14 programs declined, two significantly. Five showed moderate increases, three significantly, and the rest remained almost the same. Another way of presenting the differences between the four categories of programs is to give the average mean changes for each. In Category A, programs in which students were in helping roles and had an intensive seminar, increased an average .59 points. In Category B, programs in which one element fully and the other partially, the average amount of mean gain was .22. In Category C where students were either in helping roles or had an intensive seminar, the average mean gain was .17. In Category D, programs in which students had neither element, there was a decrease of -.15.

Table 4:27 directly compares experimental and comparison grups on the complexity/empathy index.

Table 4:27

Problem Solving: Empathy/Complexity Index
Pre-Post Mean Gain Score Comparisons
Between Experimental & Comparison Groups

	(N)	Pre-Post Mean Gain	t-value	P=(1-tail)
Service D	(63)	.96	7.31	<.0001
Comp 1	(87)	.24		
Outdoor B	(36)	.40	2.03	.023
Comp 2	(39)	-.14		
Outdoor D & C.Study E	(53)	.15	2.24	.014
Comp 3	(46)	-.34		
Career C	(19)	-.45	.78	NS
Comp 4	(49)	-.23		
C.Study B	(37)	.47	1.47	.079
Comp 5	(14)	-.14		
C.Study D	(89)	.26	.58	NS
Comp 6	(78)	.17		
Above E's	(342)	.35	5.61	<.0001
Above C's	(313)	-.13		

When direct comparisons were made, the mean change of each experimental group exceeded that of its comparison in five of the six cases and for the groups combined. The sole exception was Career C which, as previously mentioned, was a four-week program in which students did not have a seminar and were not involved in situations similar to those in the stimulus stories.

Summary

The data reported in this section suggest that experiential education programs can and do have a positive effect on student learning and intellectual development as operationally defined in this study. This is most strongly the case when the program features a combination of direct experience and formal relfection on that experience. Students with this combination felt very strongly that they had "learned more" through their experiential program than they learned in regular classes. Students in other programs did also but to a lesser degree. On the problem solving inventory the same pattern emerged, with students in programs combining experience and reflection showing substantial increases in complexity of thinking and in ability (or tendency) to empathize with others. That students did not generally increase in number of alternatives listed or in consequences cited seems to have been more a factor of testing conditions and the test itself than an indicator of program effectiveness or ineffectiveness. The tentative conclusion can thus be made that a combination of reflection and experience does have a positive impact on learning and intellectual development. Furthermore, the Problem Solving Inventory developed for this study holds promise as a viable means of testing for such growth.

Chapter Five

DIFFERENTIAL IMPACT OF PROGRAMS AND PROGRAM FEATURES

The aim of this chapter is to directly examine specific programs and program elements to determine what might explain their differential impact on students. This analysis was done in four overlapping steps: 1) to rate the programs by overall effectiveness and examine the features of the most and least effective programs. This was essentially a hypothesis-building step leading to 2) an examination of program features, 3) student characteristics, and 4) specific characteristics of the off-campus experience.

In order to reduce a massive array of data to manageable and meaningful proportion, the scales and subscales were somewhat redefined and then regrouped into three logical categories. One group was formed around several dimensions of personal development (self-esteem, self-esteem in social situations, personal competence, and sense of efficacy). The second focussed on social attitudes (social welfare orientation, concept of duty, assessment of performance, and attitudes toward adults and toward civic participation). The third element, considered separately, was the Complexity/Empathy scale of the Problem Solving Inventory. With its dual focus on cognitive process and empathetic concern it served as a link between the self-oriented measures of the first group and the other-oriented measures of the second. Except for occasional reference, the career scale was not included in this portion of the analysis.

A further departure from the previous pattern is that the tables of numbers will be used more sparingly and only when they reveal clear trends and when they convey a point more clearly than is possible by narrative alone.

Effectiveness Rating

The first step in examining the differential impact of programs was to devise a rough Effectiveness Index as a dependent variable by which programs were compared. For each scale, the mean gain score of each program was compared with the mean gain score of all experimental programs combined. Programs were given effectiveness scores in the manner depicted in Figure 5:1.

Using this system, each program was assigned an effectiveness score for each scale. The scores thus obtained from each of the scales relating to personal development were then added together to comprise a single score for the Personal Effectiveness Index. The same procedure was used to form the Social Effectiveness Index. The Complexity/Empathy Effectiveness Index was derived from only one scale, while the first two were from multiple scales. Thus the effectiveness scores from this scale were doubled to assure its results had some impact when all three indices were combined into the single Overall Effectiveness Index. Figures 5:2 to 5:4 show the relative rankings of the experimental programs on the three major dimensions of development considered in this study.

Figures 5:2 to 5:4 reveal the relative ranks of each program according to their pre-post gains on personal and social development and on the Complexity/Empathy scale. Nearly all the programs shifted positions according to the dimension of growth in question, some dramatically so. The differences in rank order were analyzed by computing Spearman Rank Order Correlations between the Indices. The Personal and the Social Indices correlated at r=.79, suggesting that relative program impact on these dimensions was similar, but clearly not identical. The greatest similarity was between the Social and the Complexity/Empathy Indices which correlated at the high level of r=.86. The least was between the Personal and Complexity/Empathy Indices which correlated at only r=.51. The implication is that the Complexity/Empathy Scale is more sensitive to changes in a person's thinking about others and society than to changes in assessment of self. A further implication is that given differing goals and structures, a program may have an impact on participant attitudes toward self without strongly affecting social attitudes--and vice-versa.

Figure 5:1: Scoring Scale for Effectiveness Indices

If individual program mean gain was:	Effectiveness score =
+ 25% mean gain of all programs combined or higher	4
+ 25% of mean gain of all programs combined	3
- 25% of mean gain of all programs combined or lower	2
negative mean gain	1

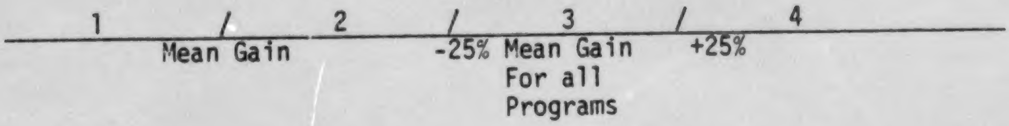

1
2
3
4
Mean Gain
-25%
Mean Gain For all Programs
+25%

Figure 5:2. Personal Effective Index (Highest Score Possible was 16). Scores based on deviance from grand mean on the following scales: Janis-Field Feelings of Inadequacy Scale; Rosenberg Self-Esteem Scale; and the Competence and Efficacy subscales of the Personal and Social Responsibility Scale.

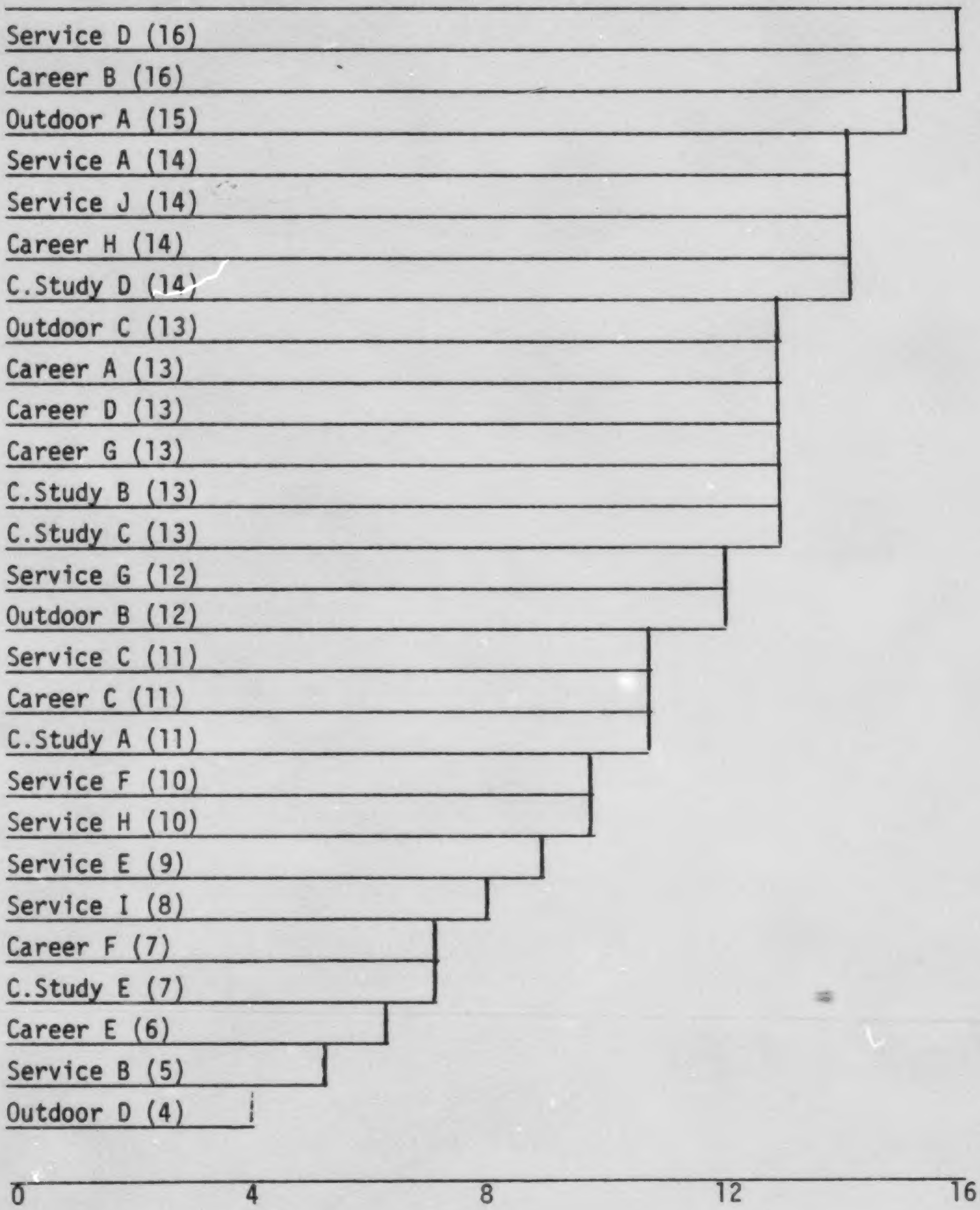


Figure 5:3: Social Effectiveness Index (highest possible score was 20). Scores based on deviation from the overall experimental mean on the following scales: Adult and Community Participation semantic differentials, and Duty, Social Welfare, and Performance subscales of the Personal and Social Responsibility Scale.

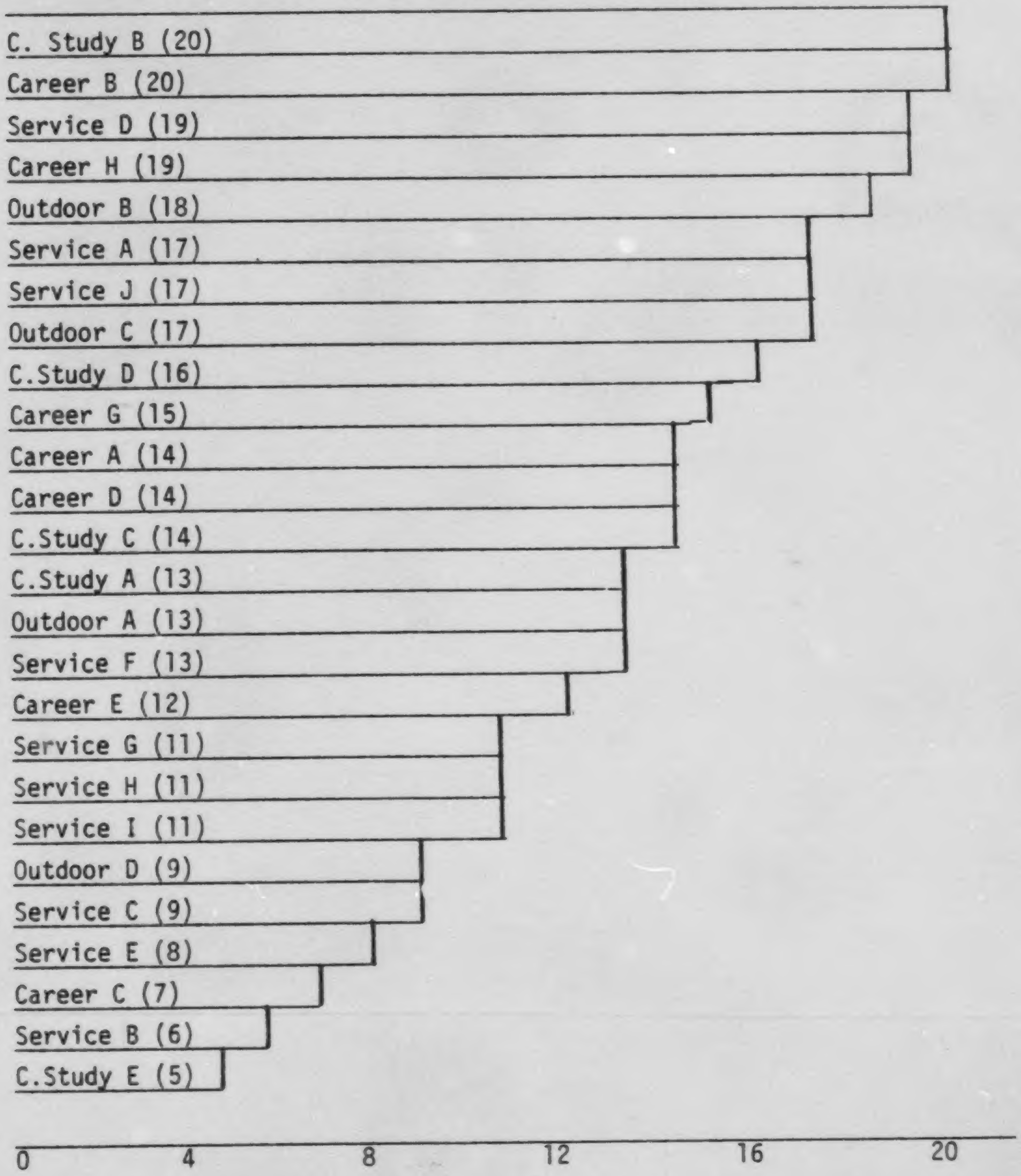
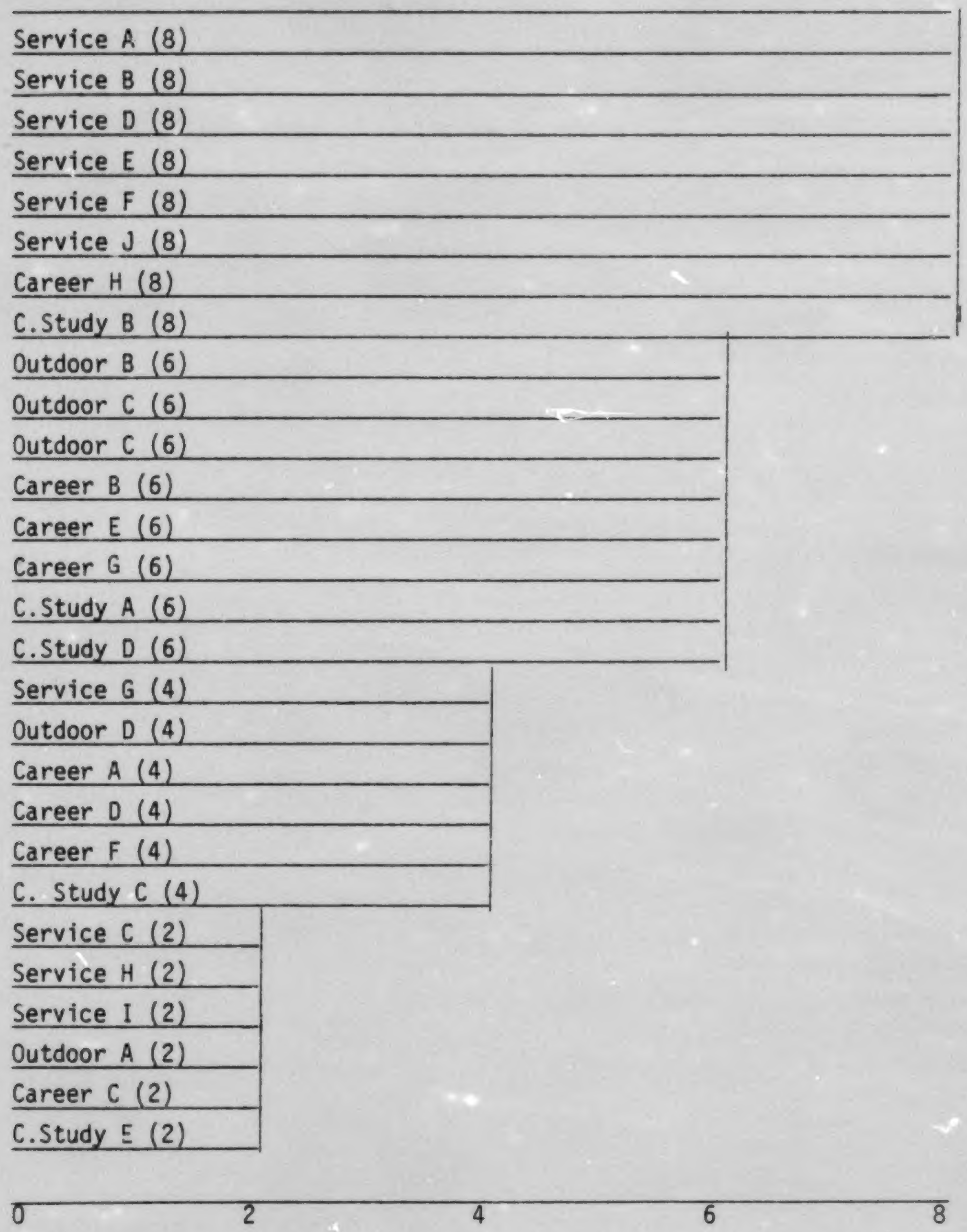


Figure 5:4. Complexity/Empathy Effectiveness Index (highest score possible was 8). Scores based on deviance from overall experimental mean gain score on the Complexity/Empathy Scale.



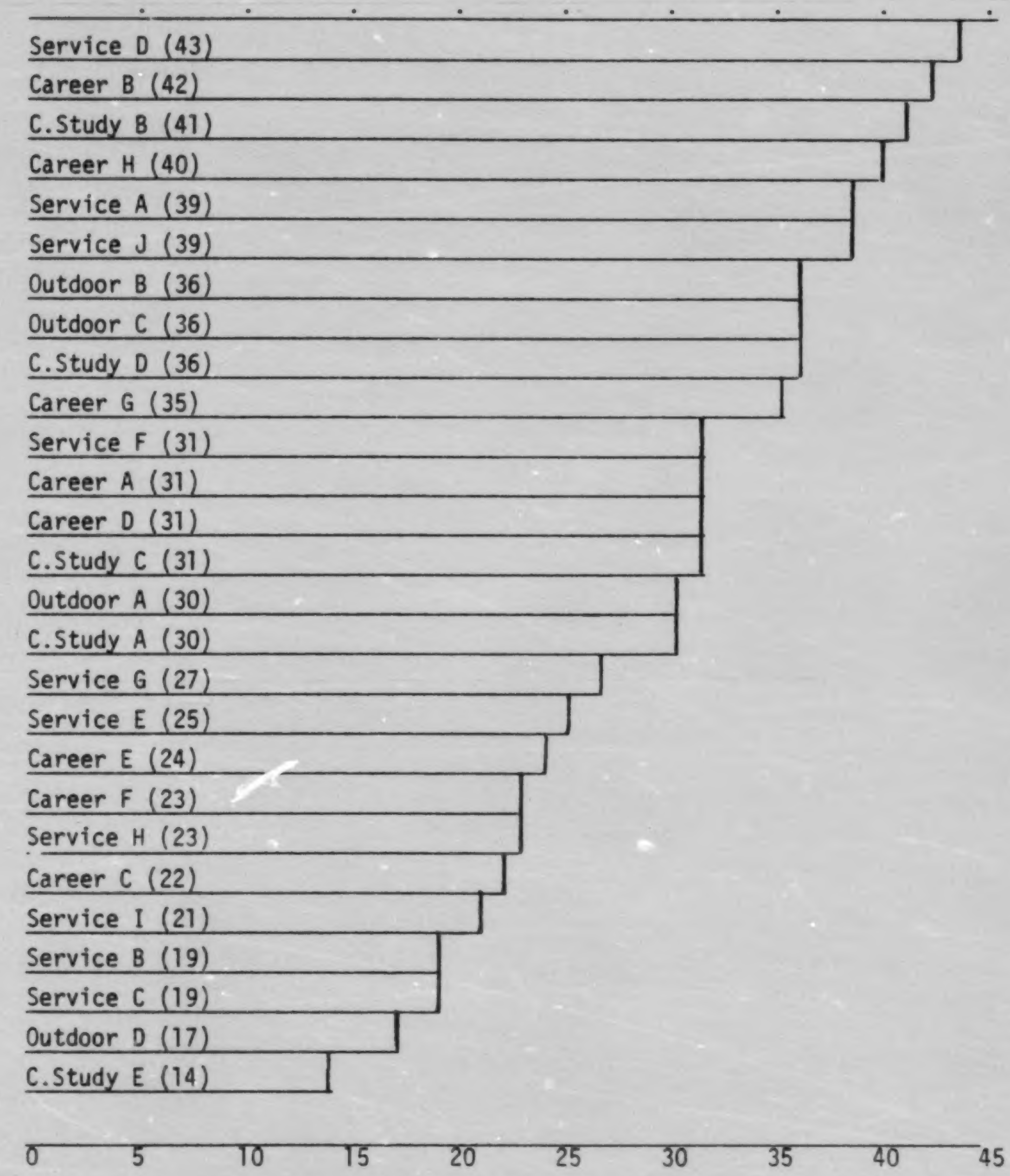
On the Personal & Social Effectiveness Indices, no program-type had a clear-cut advantage. Service, career, outdoor and community study programs were rather evenly distributed on this index. Service programs did slightly better on the Social Effectiveness index, though there was not a dramatic difference. On the Complexity/Empathy Effectiveness Index, however, service programs clearly did the best. Looking at both of these social dimensions, service programs were generally the strongest.

Figure 5:5 combines the three indices into one Overall Effectiveness Index.

The most obvious conclusion that can be drawn from Figure 5:5 (and those preceding) is that it is not the type of off-campus experience alone (e.g., outdoor adventure, career internship) which determines overall program effectiveness. While the most effective program overall featured volunteer service, so did 3 of the 5 lowest-ranked programs. The second-ranked program featured career internships--and so did several of the least effective. The third-ranked program was in the community study category and so was the lowest-ranked. Similarly, there was little pattern of relationship between general student population and program impact. The six programs with youth from mostly poverty-level families were ranked 2nd, 13th, 16th, 24th, 26th, and 27th, tending to do less well than the rest of the programs. The six highest income level groups were ranked 6th, 9th, 12th, 15th, 22nd, and 23rd, and were evenly distributed at the high, middle and low ends. The same pattern appeared to hold for other student characteristics such as grade level and school achievement. For example, the programs for junior high students were ranked, 3rd, 17th, and 23rd.

There were, however, some patterns in the rankings which at least suggest interesting hypotheses. The most obvious related to the presence of a formal

Figure 5:5: Overall Effectiveness Index (highest score possible was 44). Rating based on composite of deviations from grand mean scores on Personal, Social, and Complexity/Empathy Effectiveness Indices.



reflective component. Among the top five programs, all had well-organized seminars each week. Of the five lowest-ranked programs, three featured individual experiences with no provision for systematic reflection be it via journal, seminar, or individual conference. The fourth lowest-ranked program (Service B) did have an intensive seminar, though the students' reaction against testing made any speculation based on their scores at least questionable. Another difference between the highest and lowest ranking programs was length of the experience. All of the top five programs lasted at least 12 weeks, with three of the five lasting 18 weeks. Of the five lowest-ranking programs, three were only one month long. The other two were 12 to 18 weeks. The two other short-term programs ranked 15th and 22nd. It does appear that it is quite difficult to achieve measurable impact in such a short time.

Finally, one other slight trend was suggested by an examination of the intensity of experience, that is, the number of days spent in the community each week. The five highest-ranked programs were also quite intensive, with two twice a week, one three times a week, and two four times per week. However, the five lowest-ranked programs looked rather similar, with one of them once a week, two of them twice a week; and two five days a week. It would appear that intensity may be a necessary but not sufficient condition for program effectiveness. When intensity is combined with length (at least 12 weeks), programs tend to be more powerful.

Examination of overall program ratings suggests some hypotheses regarding program effectiveness. The strongest programs featured a systematic reflective component, extended over a full semester or trimester, and met daily for from two hours to full time. The experiences were diverse in type, but in each case featured new roles demanding responsibility and where their actions had clear consequences for themselves and/or others. The other programs each had one or two of these features, suggesting that program effectiveness is not a direct result of any one feature but a combination of them. The remainder of this chapter will examine the components of program effectiveness suggested above, testing hypotheses relating to general program features, student characteristics, and specific qualities of individual experiences within programs.

Program and Student Characteristics

The overall ratings of programs in the preceeding section suggested that several program features, particularly length, intensity, and existence of a seminar, may have been important factors in effectiveness. To determine the relative impact of program and student characteristics on student growth, an analysis of variance was done on program types and a multiple regression analysis was undertaken on the other program and student characteristics. Every scale and subscale was subjected to this analysis, within each case the individual pre-post change score serving as the dependent variable and the three program features -- existence of a seminar, length and intensity -- and the three student characteristics -- age, socio-economic status, and grade point average -- being added to the regression equasion in stepwise fashion.

Before reporting on these analysis, it may be useful to give the reader descriptive data about these characteristics.

Program Characteristics

As described earlier, there were four types of programs in this study. Ten were service programs, four were outdoor adventure; eight were career internships, and five were community study. These were rough categories and there was some overlap between categories. Actually, few programs were pure types. Elements of service pervaded several of the outdoor, career and community study programs. Research about public issues (the general intent of the community study programs) was often also found in service and career programs.

Programs varied in length from three weeks to a full year. The majority of the programs, 11, lasted for a semester -- 18 weeks. The next most common length was 12 weeks, and seven were for a trimester or quarter. There were five under four weeks in length, and four lasting from 18 weeks to a full year. Students also were asked to report how long their program lasted and 20% the respondents said their program was four weeks or less, 34% were in programs for 12 weeks; 44% for 18 weeks and 12% for more than 18 weeks.

Intensity was operationally defined as the number of days per week students participated in his/her community experience. Students were asked to indicate how often they went to their field placement. Because the question focused on "field placements" students in the outdoor and community study programs in particular, may have not completely understood the intent of the question. These students were less likely to use the term "field placement" to describe their experiential involvement. Approximately 20% of the students did not respond to this question. Of those who did, 15% were in their field placement once a week, 22% twice a week, 12% three times a week, 9% four times per week, and 23% five times a week.

Students were asked to indicate whether they had a seminar or class along with their community experience, "never", "once", "a few times" or "once a week", 27% said they never had a seminar, 9% said they had one once during the whole program, 43% said they had a seminar a few times, and 21% reporting have a seminar once a week. Student's perceptions of what comprised a seminar and how often it met differed from that of the teacher or coordinator. According to the descriptions of the courses and programs that came from the teachers, 40% of the students did have a weekly seminar. This is 13% more than the students reported.

Only 15% of the staff said students never had a seminar, 13% said they had one once during the duration of the program, and 30% of the staff said their was a seminar a few times. Even though there were discrepancies between the teachers and students, with the students tending to perceive fewer classes or seminars, we used the students responses in the anslysis. This was done for several reasons. We assumed if the students did not realize they were in a seminar, they probably did not derive much benefit from it. Also, students may have been reporting their actual attendance, and from this point of view, these figures may be more accurate.

Student Characteristics

In regard to sex, 46% were males and 54% were female. Students in the study were from 12 to 19 and in grades 7-12. Eleven percent were in 7th grade; 5% in 8th grade; 12% in 9th grade; 12% in 10th grade; 19% in 11th grade; and 42% in 12th grade. In terms of ethnic background, 82% were white, 10% were black, 2% Asian American, 2% Native American, and 2% were Hispanic.

We also asked students to report their grade point average -- 8% were A students; 28% were A/B students; 22% considered themselves B students; 30% were B/C students; 9% were C students; and 5% were C/D. Socio-economic states was calculated through combining father's education and occupational status. The approximate distribution of students along a SES continuum from low to upper middle class was as follows: 12% low; 17% lower-middle; 44% middle and 27% upper middle class.

The students also reported on their occupational and career aspirations. By far the largest number -- 56% -- aspired to the professions -- doctor, lawyer, teacher, engineer; 15% preferred to become a business executive or owner or manager of a company; 10% wanted to become trained technicians or crafts persons; 2% wanted to be in service occupations such as sales clerk,gas station attendant, waiter, etc; 5% wanted clerical jobs; and only 3% aspired to a lifestyle centering on home and the family.

Type of Program. When examined through analysis of variance, the type of program (outdoor, service, community study and career internship) proved not to be a significant determinant of program impact. When the program types alone were compared (without controlling for other factors) there was a relative and statistically significant advantage to Service programs on Complexity/Empathy; Outdoor programs on Self-Esteem and Evaluation of Adults, and Career programs on Career Exploration. However, when the features of length, intensity, and seminar were added to the analysis, the differential effect of program type virtually disappeared. The relatively weak influence of program type can perhaps be explained by the overlapping nature of the program categories. It is possible that the reason program type did not predict to particular outcomes is that the programs had multiple goals and intents, and did not offer just one type of experience.

Regression Analysis of Student and Program Characteristics

Figure 5:6 depicts the relative influence of program and student characteristics on pre-post change scores for all the test scales combined. The reported "scores" were arrived at by calculating the F-value and level of significance of the contribution of each characteristics on each scale. If the level of significance exceeded .001 a 5 was assigned; if .001 - .009 a 4; .01 - .05 a 3; .06 - .10 a 2; .11 to .14 a 1. The standard regression coefficients (beta weights) were also examined and compared. The results

obtained were virtually identical with those reported in the more straightforward and accessible manner described above and used only to discriminate between factors receiving the same score.

The clearest finding from Figure 5:6 is that program characteristics are a more powerful predictor of overall effectiveness (gain in mean scores) than student characteristics. The existence of a seminar was the most significant factors with the more frequent and regular the better. Those programs having weekly seminars were the most likely to be effective.

Length was the next most powerful feature. Those lasting 18 weeks or longer were more likely to show positive change on all scales. It is possible, of course, that a contributing factor in the short-term programs showing less change was student reaction against responding to identical test items twice in so short a time, and/or that the characteristics being measured were too stable to be influenced by any short-term intervention. However, the relatively strong showing by Outdoor A (a four week program) on the personal dimension demonstrated that it is at least possible to show change within a short term.

An additional complicating factor was that greater change for the longer programs could reflect general maturity as much as program effect. There was not adequate data to test this alternative hypothesis directly, though the earlier reported differences between experimental groups and same-length comparison groups offers some evidence against it.

Intensity of the program was a less significant predictor of effectiveness. Analysis of variance was first used to compare pre-post gains for students involved for 1, 2, 3, 4, or 5 days per week. While controlling for other program factors, no significant intensity effect was found. Similarly in the multiple regression analysis, intensity was found to be a relatively

Figure 5:6: Relative Effect of Program Features (Type of Program, Length, Intensity Seminar) and Student Characteristics (Age, GPA and SES) on Mean Gain Scores.

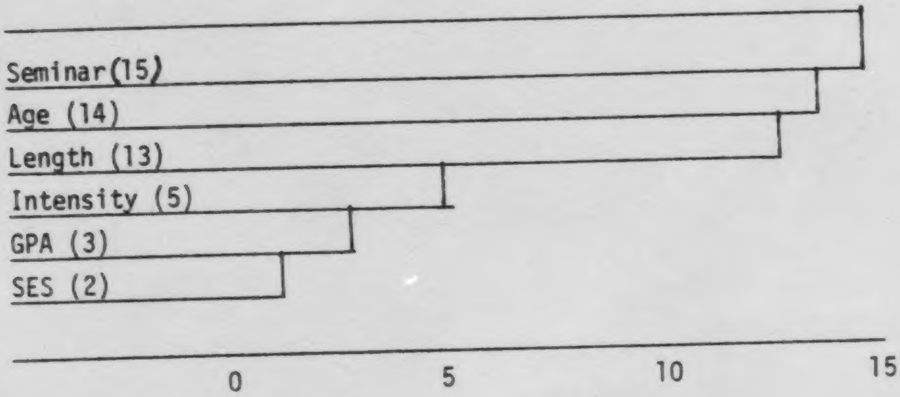
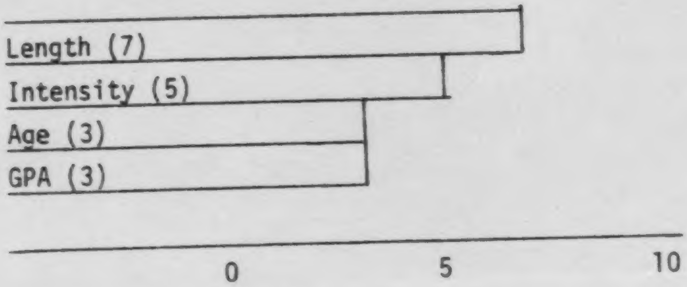


Figure 5:7: Relative Effect of Program Features and Student Characteristics on Personal Development Scales included were: Self-Esteem (2 scales), Efficacy & Competence (from SPRS)



weak predictor of change. However this may be because the more intense programs tended to also be those that were 3-6 weeks in length. The earlier analysis already indicated that shorter programs tended to be less effective.

The only student characteristic which strongly contributed to program effectiveness was age, with older students more likely to show positive change. Both student GPA and socio-economic status were very weak factors.

To understand better what factors predicted to particular outcomes, the scales were divided between those relating to personal, social and intellectual growth. The findings of this analysis are contained in Figures 5:7 through 5:9. The key findings were that the seminar had a more important impact on social and intellectual growth than it did on personal growth. It would appear that the impact of the seminar experience was strongest on attitudes toward others and toward society than toward self. Length of the program (the longer, the better) had a stronger impact on both personal and intellectual growth, but not on social development. Finally, the older the student, the more likely s/he was to show growth on social development. Age had a very slight impact on both intellectual and personal growth.

The direct examination of program features did support the hypotheses derived from the Overall Effectiveness Index. The single strongest factor in explaining positive change turned out to be the presence of a regular seminar -- particularly on measures of social development and on complexity and empathy. Other factors which consistently related to positive change were length (with 18 weeks or longer experiences producing more positive change than 12 week or shorter programs) and, to a lesser degree, intensity. These factors, however, did not account for a very large amount of the variance in the overall increases on the scales. Program characteristics only

Figure 5:8: Relative Effect of Program Features and Student Characteristics on Social Development Scales included were the Duty, Social Welfare and Performance Subscales of SPRS and the semantic differentials on Adults, Evaluation of Community activity and the Likelihood of Community Participation

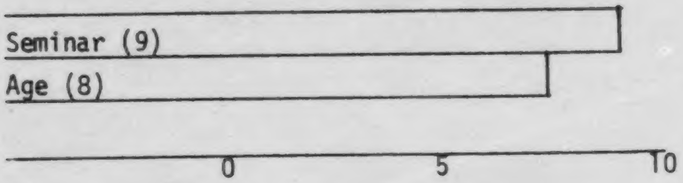
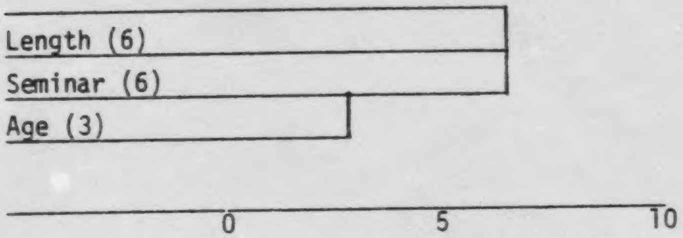


Figure 5:9: Relative Effect of Program Features and Student Characteristics on Intellectual Development Scales included were Complexity/Empathy and Learned Compared to Average class



predicted about 5% of the variance. The general type of experience proved not to be a differentiating element of program effectiveness.

Students characteristics were even less influential. Age was a relatively important factor in explaining growth on the social development, with the older students showing more growth. But neither socio-economic status nor grade-point average could explain student pre-post change scores. Overall students characteristics accounted for approximately 3% of the variance between pre-post scores.

One further question was examined. Was the lack of influence by student characteristics a result of the tests themselves or program effect -- i.e., that programs had a relatively uniform effect on all kinds of students? Partial correlations between student characteristics and change scores were computed using experimental students only and then in combination with comparison students. In combination, there was consistently a higher positive correlation between age and mean gain, and between status and mean gain. In other words, among comparison group students, the older, and higher status students, and those with lower grade point averages were more likely to show positive change on most scales. That no such pattern existed among experimental students suggests that it was relative uniformity of program impact and not a test factor that influenced pre-post gain scores. Stated differently, the effect of participation in an experiential program was stronger than the effect of student characteristics.

Characteristics of the Experience

One of the major problems in educational research and evaluation is that the assumption often has to be, or at least is, made that the program has been implemented as described and that all students participating in the program have had the same experience. That neither is usually the case can be readily attested to by anyone who has directed an educational program--or had one directed at them. Thus it was an aim of this study to go beyond gross program descriptions and student characteristics and examine more directly the specific experiences of students within the programs. The major means of doing so was to present students with a list of statements describing what people directing experiential programs had said were elements which made for successful experiences. Students were asked to indicate how often and how fully these statements described their own experience in their program.

The results from this questionnaire were analyzed in two steps. The first was to examine whether students who rated their program highly differed from other students in how they described their own experience. The second step was to use multiple regression analysis to examine the degree to which specific characteristics of experience could help predict or explain student growth on the measures used in this study.

By Student Rating. Table 5:1 reveals how students who gave differing ratings to their programs described their own experiencing of them. Students were asked to rate their program on a scale from "excellent" to "terrible." Since only 43 students out of the 938 responding to the item gave poor or terrible ratings, the only meaningful comparisons that could be made were between those who rated their program as excellent or good. It should be emphasized that students were not asked to say what would characterize a good or an excellent program, but merely to indicate to what degree the characteristics listed were, in fact, experienced by them. The relation between these responses and the overall ratings was made as a part of later data analysis.

One conclusion that may be drawn from the data in Table 5:1 is that it is possible to design and implement educational programs which nearly all students will rate favorably. Furthermore, it is possible to offer educational experiences which students find interesting and challenging and in which they feel they have had adult responsibilities and have made a contribution--and for which they were appreciated.

A comparison between the two lists of descriptive statements reveals patterns of response that at least suggest hypotheses. The clearest pattern is the consistency with which students who rated their program as excellent gave more positive responses to each of the descriptive statements. The reason may be that some persons are more likely than others to mark extreme responses on questionnaires. However, the differences in the rank order of the items suggests that something in addition was operating. Both groups gave the highest scores to "what I did was interesting" and "I was appreciated." The next highest items, however, were strikingly different. Those rating the program excellent gave the next highest ratings to items implying independence and initiative ("made a contribution" and "was free to develop and use my own ideas" and "had adult responsibility") while those rating their program "good" gave the next highest ratings to indicators of greater structure ("given clear direction" and "given enough training"). The most straightforward interpretation would be

Table 5:1

Characteristics of Experience by Student Rating of Program as "Excellent" or as "Good"

Program Rated "Excellent" (N= 415)			Program Rated "Good" (N=387)	
Characteristic	Mean Score	Rank	Characteristic	Mean Score
What I did was interesting	4.54	(1)	Was appreciated when I did a good job	3.87
Was appreciated when I did a good job	4.36	(2)	What I did was interesting	3.77
Felt I made a contribution	4.27	(3)	I was given clear directions	3.74
Had freedom to develop and use my own ideas	4.24	(4)	Given enough training to do my task	3.62
Had adult responsibilities	4.23	(5)	Did things myself instead of observing	3.61
Discussed my experiences with family and friends	4.22	(6)	Felt I made a contribution	3.56
Given enough training to do my tasks	4.17	(7)	Had adult responsibilities	3.51
I was given clear directions	4.16	(8)	Had freedom to develop and use my own ideas	3.45

Table 5:1 (Continued)

Program Rated "Excellent" (N=415)			Program Rated "Good" (N=387)	
Characteristic	Mean Score	Rank	Characteristic	Mean Score
Did things myself instead of observing	4.12	(9)	Had variety of tasks to do at the site	3.37
Had challenging tasks	4.07	(10)	Had challenging tasks	3.30
Adults at site took personal interest in me	4.01	(11)	Discussed my experience with my family and friends	3.26
Had variety of tasks to do at the site	3.99	(12)	Had freedom to explore my own interests	3.25
Had freedom to explore my own interests	3.95	(13)	Adults at site took personal interest in me	3.17
Made important decisions	3.62	(14)	Adults criticized me or my work	3.16
Discussed my experience with teachers	3.53	(15)	I never got help when I needed it	2.96
I never got help when I needed it	3.30	(16)	Made important decisions	2.88
Adults criticized me or work	3.26	(17)	Discussed experiences with teachers	2.68

Highest possible score was 5 on the following scale: 1=Practically Never; 2=Once in a Great While; 3=Sometimes; 4=Fairly Often; 5=Very Often.

that when students are able to make a contritution, use their own ideas and have real responsibility they will more strongly appreciate the overall experience.

An alternative explanation is that students who value responsibility, who want to make a contribution and to use their own ideas, are those who are most inclined to approve of an experiential program and who may, in fact, benefit most from it. To test this hypothesis, student program ratings were compared with scores on the Complexity/ Empathy Scale (it being the best approximation of maturity in the test battery). Students rating their program as "excellent" had a posttest mean score of 4.61 on this scale while the mean posttest score for students rating their program as "good" was 4.25. This difference was statistically significant (t-value = 3.12; $P = < .001$).

By Mean Change. The second step was to use multiple regression analysis to examine the degree to which the characteristics of individuals' experiences could help predict or explain student growth. Every scale and subscale was subjected to this analysis with, in each case, the individual pre-post change score serving as the dependent variable and the 16 "characteristics of experience" being added to the regression equasion in stepwise fashion.

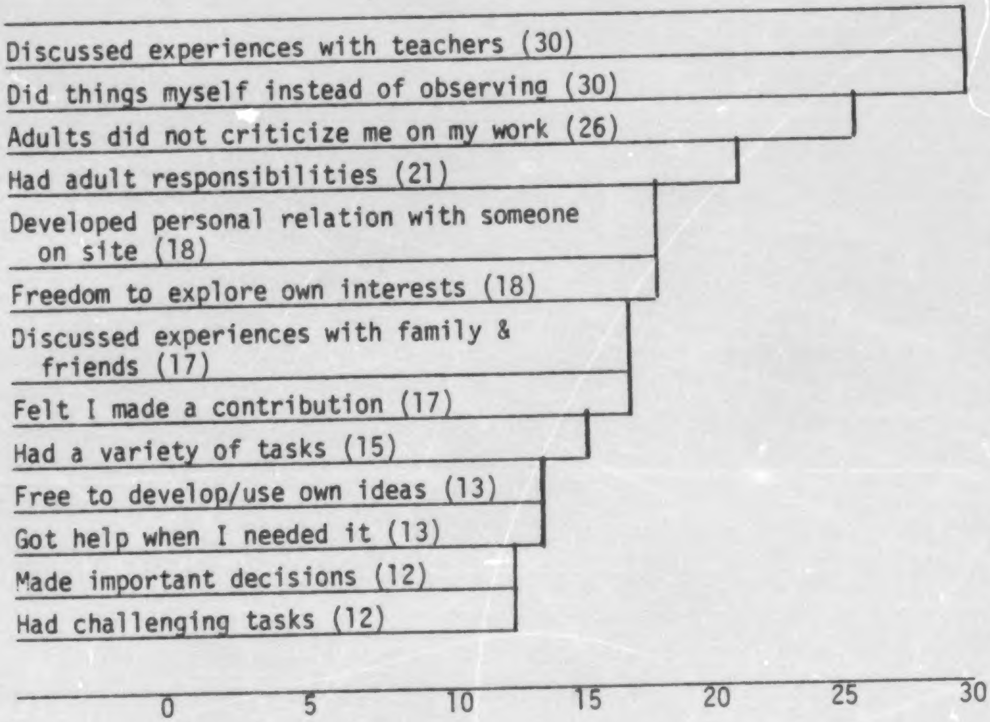
The first finding was that the characteristics of experience were, collectively, more potent predictors of pre-post change scores than either general program features or student characteristics -- or both combined. While the latter two groups of factors never accounted for more than 8% of the variance between pre-post scores, the characteristics of experience consistently accounted for from 15 to 20 percent of variance. While this is not an overwhelmingly large influence it is reasonably significant -- and greater than one would have suspected for these rather rough descriptors. The finding lends credence to the notion that individuals experience educational programs idiosyncratically and that this is especially likely to be true in experience-based programs.

The individual characteristics of experience were then analyzed to determine if there were some which contributed more than others to student gain scores.

Figure 5:10 depicts the relative influence of each of the characteristics on pre-post change scores for all the test scales combined. The reported "scores" were arrived at by calculating the F-value and level of significance of the contribution of each characteristic on each scale. If the level of significance exceeded .001 a 5 was assigned; if .001 - . 009 a 4; .01 - .05 a 3; .06 - .10 a 2; .11 to .14 a 1. If the level of significance fell below this, no score was assigned. If a characteristic failed to contribute at a level of significance of .05 on at least one scale, it was not included in the table.

The most noticeable feature of Figure 5:10 is the absence of six characteristics from the list of those which contributed to program rating. Most prominently missing were: "What I did was interesting" and "I was appreciated when I did a good job." These were the characteristics most highly correlated with, and the strongest contributors to, the overall program rating. That they were not strong contributors to gain scores on any scale suggests that "interesting" experiences and ones where one is "appreciated" are not necessarily growth-producing. As John Dewey phrased it, what is "satisfying"

Figure 5:10: Relative Effect of Characteristics of Experience on Mean Gain Scores.



is not necessarily "satisfactory." Among other items which did not contribute significantly to pre-post gains were: "given enough training," "my ideas were ignored," "given clear directions," and "adults at site took an interest in me."

Examination of the characteristics which did influence change scores failed to uncover a clear and consistent pattern. The two top-ranked items, for example, were quite different. One, "did things myself...," suggests autonomy while the other, "discussed experiences with teacher" suggests guidance and support. Issues of autonomy and support alternated throughout the list suggesting both are of equal importance.

To check this further, the scales were divided between those relating to personnel, social, and intellectual growth. Here clear patterns did emerge as depicted in Figures 5:11, 5:12, and 5:13.

The most obvious pattern depicted in these Figures is the striking difference between the lists of characteristics from Personal and Social Growth. As it turns out, the characteristics suggesting autonomy in the experience ("Did things myself," "Free to develop and use own ideas," etc.) were influential in personal but not social growth. At the same time, characteristics suggesting guidance and support ("discussed experiences with teachers," "discussed experiences with family and friends," etc.) were influential in social but not personal growth. In short, personal growth was stimulated most by dealing autonomously with challenging tasks while social development came more from having adult guidance and support along with autonomous, challenging action.

Figure 5:11: Relative Effect of Characteristics of Experience on Personal Growth. Scales included were: Self Esteem (2 scales), Efficacy and Competence (from SPRS).

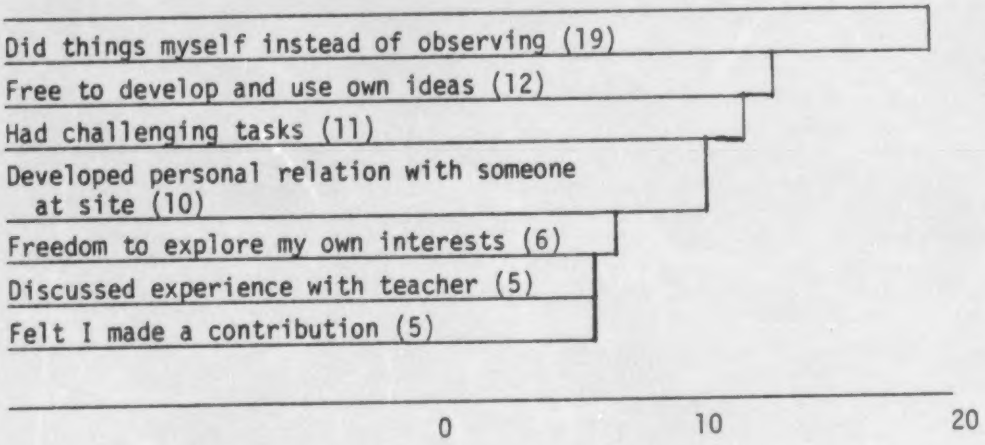


Figure 5:12: Relative Effect of Characteristics of Experience on Social Development. Scales included were the Duty, Social Welfare, and Performance subscales of the SPRS and the semantic differentials on Adults, Education of Community Activity, and Likelihood of Community Participation.

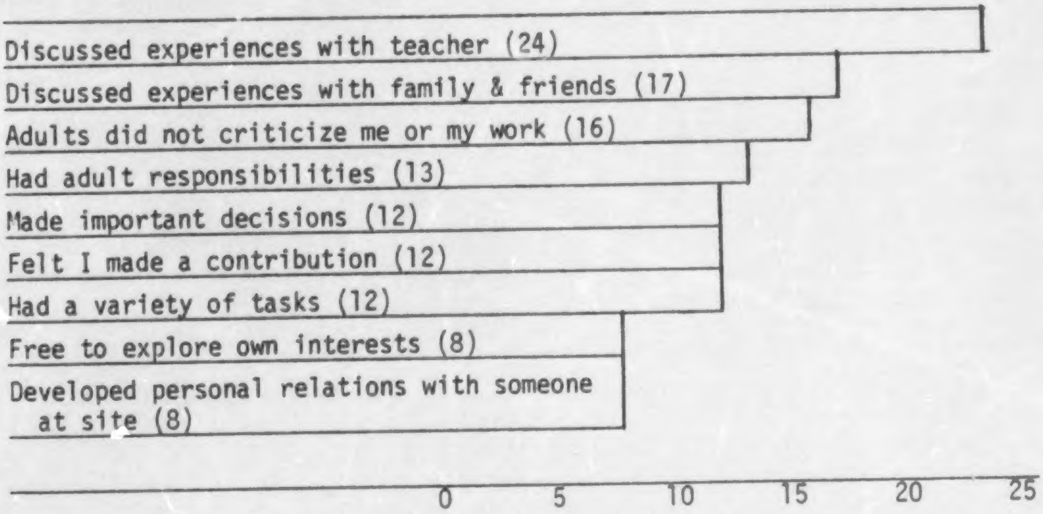
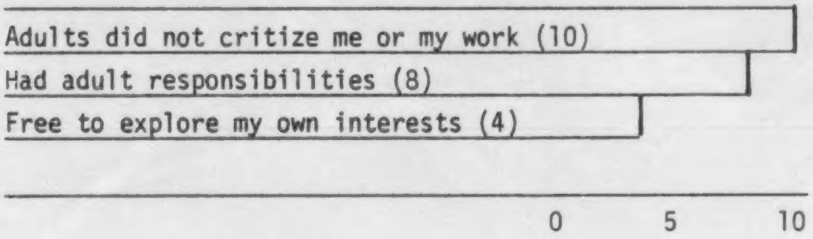


Figure 5:13: Relative Effect of Characteristics of Experience on Intellectual Growth. Only the Complexity/Empathy Scale was used.



This finding adds support to the one reported earlier that the effect of a seminar was most pronounced on issues of social development. It may also help explain why adults are more likely than students to place value on seminars, individual conferences, and other reflective components in programs. The social issues are more salient to adults. Adolescents, however, are more likely to be concerned with their immediate personal growth and (from the above, perhaps correctly) don't see "talking about" their experiences as being very necessary for that end.

Student Evaluation of Program

Along with asking students to give an overall rating (from excellent to poor) of the program as a learning experience, they were also asked to respond to an open-ended question as to what made the experience: a) good or excellent or b) poor or terrible. Approximately 82% of the students chose to write such an explanation. Almost all -- 98% -- of those answering this open-ended question described why the exprience was excellent or good. Table 5:2 gives these responses.

The most frequent explanation was that they gained a personal sense of improvement or achievement, with 22.7% giving this type of response. Some examples of student responses which were placed in this category include:

> "I liked having a first-hand experience in which I could become more efficient and independent."
>
> "It made it more reliable and showed me there were other ways to learn other than dictatorships."
>
> "Working in a day care center enables you to become a better mother and helps you in developing a better child."
>
> "I learned more than I ever have from school before."
>
> "It helped me how to learn by myself and not have someone tell me how to learn it."

Table 5:2

STUDENTS EXPLANATIONS OF "GOOD" OR "EXCELLENT" RATING
(N=745)

	Absolute Frequency	Percent
Personal sense of improvement or achievement	169	22.7
Relationships with clients, supervisors, other students	165	22.1
Multiple satisfactions	104	14.0
Learned about a career or world of work	84	11.3
Took on novel responsibilities	81	10.9
Increased understanding of other people's problems and needs	54	7.2
Effected another person's life	50	6.7
Learned about the community	38	5.1

> "You were out on your own. Learning at your own speed, handling situations by yourself. Growing up."

> "It got me more prepared to go ahead into the society and have the independence and confidence to hack it."

> "I learned a lot about myself, physically and mentally. I think that I have grown up some."

Almost as frequently mentioned, 22.1%, was that the relationships with clients, supervisors, teachers and other students made for an excellent or good learning experience. Examples of such responses include:

> "The people I met. I will never forget them and will continue to visit them."

> "An exposure to a new working situation (people, conditions) and interesting issues, and nice people(!)"

> "The people mainly; they were so great, and they also made me more aware of things that I wouldn't have learned in regular school, like problem-solving, communication, self-appreciation."

> "I liked working with the children. I grew very attached to them."

> "It was the first time I'd been with teachers and students who really cared about you and your ideas."

> "I became good friends with the people who I worked with and also worked for the company in the summer and got paid."

The next most frequently mentioned category, "Multiple Satisfactions," was used for those respondents who named several positive aspects of the experience. Fourteen percent of the responses placed in this category. Some examples include:

> "It's cliché, but you had to have been there. I feel really good about things I did here -- subtle rewards from kids -- appreciation from supervisors.

> "It's a fabulous experience in learning about careers. It enables me to become involved in the community. I helped people and learned about problems in the community and I helped out. Also, I made friends with adults. It is a truly fabulous and stimulating program."

> "I learned about other kinds of people in the world. About my career choices. I learned more about the community."

> "It was a different way of learning; a change of pace. It wasn't the same old classroom. It made me become more open-minded to new experience, taking the plunge full force. I also liked being treated like an adult.

Of the students, 11.3% felt the key factor in making this a good experience was the opportunity to learn about a particular career and the world of work in general:

> "The experience of working with people and their vocations was enlightening and exciting at the same time."

> "I got a chance to work with many people that have given me insight into possible careers. I liked it because it gets you into the real world, not school."

> "I liked the exposure to the business world on the inside. You get out there and do things. " You get the actual experience instead of what you read."

Being able to take on novel, challenging responsibilities made the experience a positive one for 10.9% of the students. Examples of student comments include:

> "It gives you a chance to help someone with a problem and at the same time I had the responsibility put on me to do something so a Vietnamese boy could learn how to read."

> "The thinking and learning when I was out there. I had to do those things and it made me see a lot, like I was important."

> "I learned what teaching children is all about; I had the responsibility for these eight year olds. I got a lot of recognition, and it didn't matter if it was for money either."

> "The fact of learning responsiblity in everything one does!"

> "There was real..no busy work. I had to handle situations just like adults do."

The next two related categories, increased understanding of other people's problems and having an effect on another person's life, were each considered the leading advantage of the program by approximately 7% of the students. Students comments in these two categories included:

"Learned that junior high students can't reason or even solve a problem without fighting."

"I had never realized before that old people need help and companionship like other people."

"Helping others -- not for money."

"I really can see what teachers have to go through when they try to show someone how to do something. I learned that it's not that easy to get someone to learn; they have to want to learn first.

"I had fun and learned the true meaning of helping someone in need. It made me feel good to show them what I already knew."

"Just having the experience of working with people who really appreciate and enjoy your company. It makes her day to have someone come in and show concern."

Finally, approximately 5% said they learned about the community and the services and resources available in it:

"I found out how to get around the city and even talked to some city councilmen."

"The program helped me find out where people who need help can go. I really learned a lot about programs for runaways."

Only 2% of those students responding to this question had had a poor or terrible experience. Because the number of responses was so small -- only 15 -- the data may not be very meaningful. The two main reasons that students gave for having a negative experience was that there was poor communication between the parties involved -- the student, the teacher, and the community supervisor -- and that they did not learn "anything" from the program.

Summary

A series of Effectiveness Scales were constructed to rank programs as to their impact on social, psychological, and intellectual development. The strongest programs all featured a systematic reflective component, extended over a full semester or trimester, and met daily for from two hours to full time. The specific type of experience (service, career internship, etc.) proved to be less of a factor, though service programs were the highest-ranked on the Complexity/Empathy scale and also did relatively well on the index of social development. More important than the general type of experience, however, was that the experiences, of whatever kind, featured adult roles demanded responsibility, and had clear consequence for the students and/or others.

While the features mentioned above were general indicators of program effectiveness, none stood out as infallible predictors of program strength as virtually every program could claim one or two of them. The implication was that program effectiveness was not a direct result of any one feature but a combination of them as discussed below.

Program characteristics. Among general program characteristics the presence of a formal (and at least weekly) seminar proved to be the single strongest factor in explaining positive student change. This was particularly true on measures of social and intellectual development. Other factors which consistently related to positive change were length (especially 18 weeks or longer) and, to a lesser degree, intensity (4-5 days per week). The influence of these latter features was most pronounced in the area of personal development. The general type of experience (outdoor adventure, community study, etc.) was not, in itself, a discriminating factor of effectiveness. It must be emphasized, however, that all of these factors collectively did not predict more than about 5% of the variance in pre-post change scores.

Student characteristics. The student characteristics analyzed were age, grade-point average, and socio-economic status. These were even less influential than program features, and accounted for only about 3% of the variance between pre-post scores. Among them only age showed any influence at all, with older students showing somewhat greater growth than younger students, especially on issues of social development. Neither student GPA nor socioeconomic status were significant factors in predicting change.

Characteristics of the Experience. Compared with program features and student characteristics, the specific characteristics of an individual's experience proved the more powerful predictors of pre-post gains.

The characteristics which contributed most strongly toward a student's approval of his/her program (rating it "excellent" or "good") were that the experiences were "interesting" and that the students felt "appreciated" for their efforts. There also proved to be a positive relation between level of maturity and student ratings of their experiential program.

While feeling appreciated and doing interesting things contributed to high program ratings, these characteristics had little influence on whether students grew from their participation in a program. The factors which contributed most strongly to pre-post gains were, rather, a mixture of features describing a combination of autonomy (e.g., "did things myself") and a collegial relationship with adults (e.g., "discussed experiences with teachers"). Conversely, characteristics which described a more typically student-adult relationship (e.g., "given enough training," and "given clear directions") did not contribute to pre-post gains and, in fact, correlated negatively with them.

The characteristics of experience were further examined to see if certain ones contributed more to one kind of growth than another. It turned out that the characteristics suggesting autonomy (e.g., "free to develop and use own ideas") were more influential in promoting personal growth (e.g., self-esteem) than in social growth (e.g., responsibility). The characteristics suggesting a collegial relationship with, and even guidance by, adults showed the exact opposite pattern of influence. In short, personal growth was stimulated most by dealing autonomously with challenging tasks while social development accrued more from interaction with adults--in a non-student role.

Analysis of student responses to an open-ended question asking them to explain why they rated their program as excellent or good revealed another interesting pattern. The majority of responses described personal benefits to the participant (e.g., "personal sense of improvement") while only a small minority cited more socially-relevant gains (e.g., "affected another person" or "increased understanding of others' needs").

It goes only slightly beyond the data given to argue that the analysis suggests that students will rate a program highly if the experiences are interesting, if they're shown some appreciation for effort, and if they sense they've personally gained from it. Similarly, students will show greatest personal gain when they are given some autonomy to act on their own and to use their own ideas. In contrast, positive change in social attitudes requires more interaction with adults--but involvement as colleagues where they can initiate contact and not feel they're being patronized or controlled.

Chapter Six

SUMMARY AND IMPLICATIONS

> Experience is never limited, and it is never complete; it is an immense sensibility, a kind of huge spider's web of silken threads suspended in the chambers of consciousness and catching every airborne particle in its tissue.
>
> (Henry James, quoted in Pitchett, 1979, p. 3)

James' poetic characterization serves to put the Project and this report in perspective. As experience is too immense, too complex, illusive, even too mysterious a phenomenon to fully comprehend, so also is it the case with what is learned from it. There is no pretense in this report that its tables and numbers have miraculously captured that "sensibility" which has eternally eluded the poet. The report's more pedestrian aim has been to capture some small particles of experience, to reduce some part of the mystery to a size and form that can be grasped, understood, manipulated, and from which conclusions may be drawn and lessons learned. In Chapter Six the work of the Evaluation of Experiential Learning Project is reviewed and its findings summarized. It concludes with some implications for practice and suggestions for further research.

Overview of Project

Case for Experiential Education

The roots of experiential education lie deep in the theory and practice of education. It is primarily in this century, however, and with the prodding of John Dewey, that educators have seriously debated the relation between experience and education and promoted broadened social experience as a foundation for learning and a method of instruction.

Manifestations of experience-based learning have risen and fallen in cyclical fashion throughout this century and, in the 1970's, emerged again as prominent educational practice. During the 1970's a number of blue-ribbon panels issued calls for a broad reform of secondary education, and each firmly recommended that schools extend the breadth and intensity of experience available to adolescents. For example, the recent study of high schools by the Carnegie Council on Policy Studies in Education (Kerr, 1979) recommends that junior and senior students attend classes only three days a week and devote the other two days to education-related work or community service.

The arguments for experiential education are framed in terms that go beyond common educational discourse. They are rooted in a concern for the total development of young people--social, psychological, and intellectual. This development is seen as jeopardized by a social milieu that increasingly isolates young people from the kinds of experiences, encounters, and challenges that form the basis for healthy development and that add purpose and meaning to formal education. The aim of social development--the development of active, concerned, involved citizens--is jeopardized by practices which isolate the young from adult society and deny them an active and valued role in it. The aim of sound psychological development--of persons who have a clear sense of who they are, what they believe, and what they can do--is jeopardized by lack of opportunity to demonstrate one's worth and to test, stretch and challenge who one is and can be. The aims of intellectual development and academic learning are jeopardized by equating education with classroom instruction in an educational process that produces graduates who are "information rich and action poor" (Coleman, 1974), who have had insufficient opportunity to test and apply that information, and who have not been prepared to continue learning from the experiences of everyday life outside of school.

More by default than desire or design, the schools have been left to play a central role in the total development of America's young people. Few educators have been at ease with the responsibility. Some have chosen to deny its broadest implications and to focus on the schools' more narrow and traditional aims of developing cognitive skills and transmitting the accumulated experience and wisdom of the society. Others have accepted a broader view--some from a sense of cultural necessity and some from a belief in the interrelationship of all dimensions of development--that no one aspect can be achieved in isolation from the others. Among the latter are numbered many of the advocates of experiential education.

Background of Project

While strong endorsements of experience-based education abound, there is relatively little "hard" evidence to demonstrate or document the impact of such programs on student participants. Little effort has been made to systematically test the assumptions underlying the endorsements or to investigate empirically which specific forms of experiential programs may be the most effective in realizing the hypothesized benefits.

The evaluation of Experiential Education Project was undertaken to begin filling that gap--to assess the impact of experiential education programs on the psychological, social, and intellectual development of secondary school students. Equally importantly, it aimed at using this data to identify the program variables that are most effective in facilitating such development.

The project was initiated by the Commission on Educational Issues and co-sponsored by the National Association of Secondary School Principals, the National Association of Independent Schools, and the National Catholic Education Association. It evaluated 27 experiential programs in independent, public, and parochial schools around the country. Over 1,000 students participated in these programs.

A priliminary study was also conducted involving nearly 4,000 students in 33 programs.

Primary funding for the Project was provided by the Spencer and Rockefeller Foundations with additional support from the General Mills Foundation. The Project operated out of the Center for Youth Development and Research, University of Minnesota, under the direction of Drs. Diane Hedin and Dan Conrad.

Defining Experiential Education

For purposes of this research effort, experiential programs are defined as "educational programs offered as an integral part of the general school curriculum, but taking place outside of the conventional classroom, where students are in new roles featuring significant tasks with real consequences, and where the emphasis is on learning by doing with associated reflection."

Selection of Programs

The programs included in the study are of four major types: volunteer service, career internships, outdoor adventure, and community study/political action.

Within each type, individual programs differ in terms of length--from four weeks to nine months; intensity--from 2-4 hours each week for full time; nature of reflective component-- from none to a daily seminar related to the field experience; student characteristics--from ages 12-19, good students and poor, and from low income to highly affluent; its voluntary or compulsory nature--with nearly all programs being voluntary.

The school programs included in the study were not randomly selected, but chosen because of a demonstrated record of excellence--and as being representative of the major type of experiential programs. It seemed prudent to study only the most well-conceptualized and established programs to discover the effects of experiential programs.

We assumed, in addition, that the teachers and administrators involved in exemplary projects would be the persons best able to define, articulate, and specify the fundamental outcomes for experiential education. Furthermore, this research effort was committed to an approach which was practical, understandable, and applicable to everyday life in schools. Thus, a "Panel of Practitioners" (the educators who ran the programs being studied), along with the research project co-directors, were responsible for defining the issues to be studied, for helping to select and develop assessment tools, for implementing the research design, and for helping to interpret the data collected. It would be impossible to overestimate the contribution of this Panel to the conceptualization and implementation of the research effort and the interpretation of the data collected. Such cooperation and counsel made this a shared effort throughout, one in which all felt a commitment to its success.

Selection of Issues

The first step of the research process was to survey the directors of 30 experiential programs. They were asked what they believed to be the actual effects of their programs on students, what each had directly experienced, seen, and heard.

There was a striking similarity in this "testimony of concerned observers." They described a core set of outcomes which each of them had observed whether they represented programs in small towns or large cities, work with low income or affluent youth, or programs featuring outdoor adventure, service, internships, or political action. The important implication was that there are common threads that unite a variety of exemplars of experiential education.

Among the observed effects reported by the directors were 24 which appeared with high regularity. This list was redrawn as a questionnaire and in May, 1978, administered to nearly 4,000 students in 33 programs. The students were asked which, if any, of the outcomes represented what they personally had gained from their program. A summary of the results of this survey is presented in Table 6:1 which is an abridgment of that found in Chapter Three of the final report. On 14 or the 24 items there was an average agreement level of over 80% across all programs. The most frequently cited outcomes fit into three major categories--social, psychological, and intellectual growth. These became, then, the major areas of investigation for the project itself.

Table 1

What Students Learn in Experiential Learning

Composite Profile of Students Responses from 30 Experiential Programs (N=4,000)
The first 10 and last 4 of 24 items

ITEM (in rank order)	PERCENTAGE OF RESPONSES		
	Agree*	Disagree*	Don't Know
1. Concern for fellow human beings	93	4	3
2. Ability to get things done and to work smoothly with others	93	4	3
3. Realistic attitudes toward other people such as the elderly, handicapped, or government officials	88	4	8
4. Self-motivation to learn, participate, achieve.	88	7	5
5. Self-concept (sense of confidence, sense of competence, self-awareness)	88	7	5
6. Responsibility to the group or class	86	7	11
7. Risk-taking--openness to new experiences	86	7	8
8. Sense of usefulness in relation to the community	86	8	6

ITEM (in rank order)	PERCENTAGES OF RESPONSES		
	Agree*	Disagree*	Don't Know
9. Problem-solving	86	9	5
10. Risk-taking--being assertive and independent	86	9	5
21. Use of leisure time	60	26	14
22. Narrowing career choices	54	34	12
23. To become an effective parent	52	29	19
24. To become an effective consumer	46	32	22

*Strongly agree and agree are combined, and disagree and strongly disagree are combined.

The Research Questions

In regard to social development, the research questions were as follows: to what extent do experiential programs have a positive impact on students': a) level of personal and social responsibility; b) attitudes toward others; c) attitudes toward active participation in the community; and d) involvement in career planning and exploration. In regard to psychological development, both general self-esteem and self-esteem in social situations was assessed, as was moral development. Finally, in regard to intellectual and academic growth, students were asked for self reports on learning, were tested on problem-solving and, as mentioned above, tested for levels of moral reasoning.

In addition to looking at the general effects of experiential education on student participants, we also were interested in determining the ways in which different program forms (community service, internships, political action, community study, and adventure education) and formats (length, intensity, characteristics of the individual field experience) affect student learning.

For example, do short-term experiences of three to four weeks show any effect on attitudinal change? Does the intensity of the program--two hours versus ten hours per week--affect student outcomes? Are some types of programs, e.g., community service, more likely to promote a sense of social responsibility or interest in community participation? To what extent do the characteristics of each student's individual experience affect the results?

The Research Method

Test Instruments. The overall effects (the dependent variable) of social, psychological and intellectual development were operationally defined as scores on the test instruments and questionnaires employed in the study. The specific instruments used to measure psychological development were the Defining Issues Test (moral reasoning), the Janis-Field Feelings of Inadequacy Scale (self-esteem in social situations), and the Rosenberg Self-Esteem Scale. Social development was measured by the Social and Personal Responsibility Scale (social responsibility), three semantic differentials (attitudes toward others) and the Owens' Career Exploration Scale (career maturity). Intellectual development was investigated through the Problem Solving Inventory and through self reports of participants. The test battery included both standardized tests and adaptions of standardized tests. Two of the tests, the Social and Personal Responsibility Scale and the Problem-Solving Inventory were original instruments designed specifically for this study.

Because the outcomes being measured were elusive, triangulation of the data appeared to be the most reasonable approach. Each outcome was looked at from several different angles: paper and pencil tests; systematic observations of parents, teachers, and community supervisors; student journals and writing samples; case studies of individual students and programs; and a host of unobtrusive measures.

Design. All students were tested pre and post on or near the first and last days of the program. Six of the experimental groups (at least one in each program type-cluster) also had comparisons. These were not random controls, but the students in each were comparable to those in their experimental pair in terms of age, grade-in-school, geography, grade-point-average, socio-economic status, and, largely, in pre-test scores. The comparison groups were from non-experimental classroom programs, and were tested pre and post at the same time as their experiential pairs.

Analysis. The data were analyzed in two phases. In the first, pre-post results were compared for each experimental and control group individually, by experimental and control groups combined, and by direct comparison between the four experimental-control pairs available for the study. In the second phase, specific features of the programs were examined to assess their influence on pre-post change scores. The specific elements investigated were: type, length, and intensity of the experience, existence of a reflective component, student demographic characteristics, and the specific characteristics of individual experiences (e.g., how interesting, how demanding of responsibility, etc.). The analytical tools employed included t-tests of significance, analysis of variance, and multiple regression.

Findings: Impact on Students

The results from the formal measures employed in this study demonstrated that the experiential programs did have a positive impact on the psychological, social and intellectual development of the student participants. This conclusion, while true in general, masks significant patterns of effect and effectiveness which are summarized below.

Psychological Development

An important finding in research in schools is that studying the formal, academic curriculum does not automatically lead to personal and psychological growth. In fact, there is a body of research documenting the largely negative impact of schooling on such variables as self-esteem, interest in learning, and personal autonomy (Sprinthall & Sprinthall, 1977). Proponents of experiential education have argued that psychological growth is more likely to be achieved through their approach to learning. They believe that placing students in well-planned experiential confrontations with practical problems is an effective mode of promoting personal growth. In summary, psychological growth requires challenge, conflict, support and significant experience.

Did the findings of this study corroborate this theoretical argument for experiential programs? The answer is clearly yes as discussed below.

Moral Reasonsing. Students in two experience-based programs and one comparison group (from the same school) were administered the Defining Issues Test (DIT) pre and post. This is a paper-and-pencil test designed to measure levels of moral reasoning as detailed by Lawrence Kohlberg. All three groups received identical instructions in Kohlberg's theories, the only difference being that the two experiential groups were simultaneously involved in service activities in the community.

The test results showed that both experimental groups attained significant gains in their moral reasoning scores while the comparison group did not gain. The increases were significant in themselves and in contrast to the comparison group. This finding substantiated that of several other studies which have likewise shown the combination of significant role-taking experiences and active reflection to be an effective means of promoting growth in this aspect of development.

Self-Esteem. Students in experiential programs did show increases in self-esteem and to a degree slightly but consistently greater than those registered by comparable students in classroom-based programs.

On the Janis-Field Scale, which focuses on the confidence one feels in social situations (e.g., meeting new people, speaking in front of a class), 20 of the 27 experimental groups increased, 10 at a level of statistical significance ($<.05$). On the Rosenberg Scale, which deals with more general feelings of self-worth (e.g. "I feel I have a number of good qualities"), 23 of the 27 experimental groups increased, 9 at a level of statistical significance. Students in the comparison groups also registered some gain in self-esteem, consistently on the Janis Field Scale (5 of 6 groups increased, 3 significantly) and sporadically on the Rosenberg Scale (3 of 6 groups increased, 2 significantly). In direct comparison, the experimental groups had greater increases on both scales, but this advantage was statistically significant only on the more stable Rosenberg Scale.

Among program types, the highest absolute levels of self-esteem, even on the pretest, were registered by students entering career internships. It may be that such programs attract students who are relatively more sure of themselves, at least enough to test themselves in adult career roles. The most consistent pre-post gains were registered by students in outdoor programs--both in comparison to other experiential programs and to their own gains on the social and intellectual dimensions of growth examined in the study. Since no other program category showed such consistent results, it suggests that intensive outdoor experience may have a particularly strong effect on self-esteem. This may result from the intensity and uniqueness of such experiences and/or from the fact that evidence of achievement is clearly seen by, matters to, and is immediately reinforced by both teachers and peers.

In summary, the results from the Defining Issues Test and the two measures of self-esteem lend support to the hypothesis that experiential programs can effectively promote the psychological development of adolescents and do so at least somewhat more effectively than classroom-based programs. The data further suggest that the impact is strongest when the experience is most intensive, most dissimilar from ordinary school activities and, in the case of increased moral reasoning, when there is a combination of action and systematic reflection.

Social Development

In the past decade, there has been a great deal of public concern about the level of personal and social responsibility exhibited by teenagers. Charges of increased privatism, hedonism, and aimlessness among adolescents have become commonplace, along with findings that they feel a strong sense of powerlessness in relation to the larger society and no sense of having a significant role in it (Hedin, 1979). Experiential educators have argued that it is precisely this lack of a significant role in the community and society that has bred apathy, cynicism, and powerlessness. They counter by suggesting that placing students in responsible roles in which their actions affect others will help them develop more responsible attitudes and behaviors.

This section summarizes the findings relevant to this hypothesis: that responsible action in an experience-based program would have a positive impact on students' levels of personal and social responsibility, have a positive influence on their attitudes toward adults and others, lead them to feel more inclined to participate in their communities and, relatedly, help them plan for and to explore potential adult careers.

The results reported below clearly show that experience-based programs can have precisely those effects. Despite the inevitable differences between specific programs, there was a strong and consistent showing of positive impact among the experiential programs as a whole. Furthermore, these gains significantly discriminated between these programs and the comparison groups. The latter tended to decline or show no significant change on most of the scales and subscales relating to social development. These results are outlined below according to the specific scales employed.

Social and Personal Responsibility Scale (SPRS). The overall results from the total SPRS scale indicated general positive movement by the experimental groups and no change by the comparisons. The experimental groups combined had a mean increase of almost 2 full points (+1.92, P=<.0001) while the combined comparisons declined (-.09, P=NS). More precisely, 23 of 27 experimental groups increased, 13 by at least 1.50 mean points and at a level of statistical significance. Of the 4 groups which did not increase, 2 had the highest pretest scores of any of the groups and were still among the highest on the posttest; the other 2 were very low income groups who generally tended to do poorly on paper and pencil measures. In contrast to the above, 5 of the 6 comparison groups declined, 2 at a level of statistical significance.

There were some differences by program types. Career Internship programs showed the largest positive gains (an average of 2.58 points); Community Study/Action was next (1.77); followed by Service (.63) and Outdoor programs (.30).

SPRS Subscales. The SPRS contained five subscales relating to sense of duty, social welfare orientation, social efficacy, sense of competence and assessment of performance. The combined total of all experimental groups showed significant positive change on all five subscales while, among the comparison groups (combined) there was no significant change on any subscale except Social Welfare--in which there was a statistically significant decrease. Nine of the experimental groups showed positive change on each subscale. There were only two instances of significant positive change among the comparison groups, both on the Competence subscale.

The precise pattern of change was more complicated. The subscales showing the most frequent positive change were those relating to Competence (22 of 27 experimental groups) and Performance (19 of 27). The comparison groups also made their strongest showing on these scales though to a samller degree. On the Efficacy and Duty subscales the patterns for the experimentals was similar to that shown on Competence and Performance but with somewhat less positive change. The Social Welfare scale, however, showed a pattern substantially different from the other subscales. The experimental groups showed their smallest (+.12 mean gain) and least consistent increase (13 of 27 groups) on this dimension. At the same time, the comparison groups showed a statistically significant decline (-.18, $<.05$) spread over 5 of 6 programs. Stated summarily, the experimental groups made their strongest increases on Performance, Competence, and sense of Duty while the scales which most sharply discriminated between experimental and comparison groups were Social Welfare and, to a somewhat lesser extent, Efficacy and Performance.

Overall, the strongest changes were toward taking responsible action as opposed to having more responsible attitudes; and, among attitudes, toward having more personally responsible attitudes as opposed to socially responsible attitudes. This finding is consistent with most research on attitudinal and behavioral change which suggests that changes in behavior tend to precede rather than follow changes in attitude. It also suggests that the traditional model in citizenship education, that instruction in proper attitudes about personal and social obligations will lead to responsible behavior, may need revisions. While the evidence from this study can only be suggestive of that conclusion, it is further strengthened by the fact that most of the comparison students were in social studies classes which deliberately, and apparently ineffectively, aimed at improving attitudes toward taking personal and social responsibility.

One further point from the SPRS data bears mention. Students in service programs had the highest pretest scores on the SPRS followed by those in career internships, outdoor programs, and community study. The advantage for students in service programs was largely accounted for by their higher scores on the sense of duty and the social welfare subscales. This would be consistent with the fact that these students had volunteered for programs in which helping and serving others is the major task (in contrast, students in outdoor programs had the lowest social welfare pretest-and posttest-scores). Students in Career internships had the highest scores on the performance and competence subscales which seems consistent with their chosing placements where they would be working independently with and as adults. It also coincides with their being the highest-ranked students on the two measures of self-esteem reported earlier.

Attitudes Toward Adults. A common critique of modern socialization practices is that young people are locked in an adolescent ghetto separated from meaningful interaction with adults. The implicit assumption is that separation breeds suspicion, if not hostility, and that greater contact with adults would promote more positive attitudes. This latter hypothesis was confirmed by the results of this study. Students in the experiential programs entered into collegial relationship with adults that are atypical of most school and work settings. There students tended to show large, consistent changes on the semantic differential scale toward more positive attitudes toward adults.

There was a positive change in 22 of the 27 experimental groups, and the combined mean change for all the experimentals was +1.45 which was statistically significant at P=<.0001. This mean change of near 1.5 was made on a scale of only 7 possible points. Students in comparison groups, conversely, showed an overall decline of -.74 mean points spread over 5 of the 6 groups.

It is clear, from the above, that the adolescents do not automatically think more highly of adults merely because they have moved a little closer to that status themselves. It depends on what they are doing during that time. Remaining in a classroom with an adult teacher appears not to be a situation which raises their esteem of adults. Associating with adults on a collegial basis outside the classroom does, however, seem to have such a positive effect.

Attitudes Toward Others. A further contention of the proponents of experiential education is that when students are involved with persons they don't ordinarily encounter they will come to value them more highly. The data, from a 10-item evaluative semantic differential scale, clearly indicates that community participation has a positive effect on students' evaluations of the people with whom they have been interacting. In the direct contrast between experimental--comparison pairs, each experimental group increased significantly while each of the comparison groups showed a decline. The difference was significant for the individual and the combined comparisons (the latter at $<.001$).

Considering specific groups or categories, students initially valued hospitals and little kids most highly, followed by old people, business persons, police and, dead last, junior high kids. On the posttest the ratings of all these categories had increased significantly--except for hospitals toward which which there was a small increase and for business persons toward which there was a slight decrease in valuation.

The small increase in valuation of hospitals may reasonably be explained by the fact that the high pretest rating (the highest of any category) left little room for positive change. The decrease in relations to business persons is less easily explained. Perhaps it is the nature of interaction, not interaction per se, that creates more positive attitudes. In the case of internships, students perhaps tended more to be observers than participants, a situation that could account for the lack of change.

In any case, the fundamental finding of this portion of the study is that students do tend to show increased appreciation for the people with whom they associate in their off-campus experiences.

Attitudes Toward Being Active in the Community. A further hypothesis of experiential educators is that direct participation in the community will lead students to value such activity more highly and increase the likelihood of their seeing themselves as accepting community responsibilities in the future. The first part of the hypothesis was tested through a semantic differential with pairs such as smart-dumb and useless-useful. The second was tested by a single continuum from "something I will do" to "something I won't do." The results from both scales confirmed the hypothesis.

At the time of the pretest, students in experiential classes valued the general notion of "being active in the community" less highly than did students in traditional classes. The highest rating was given by students in service programs followed by the comparisons and then students in community study, career internships, and outdoor programs. By the time of the posttest the situation was reversed. All of the comparison groups decreased, while 20 of 27 experimental groups increased. The strongest gains were by students in community study and outdoor programs, and the least gain by students in career internships. It must further be noted that for 4 of the 6 comparison groups the value and importance of community participation had been a deliberate (and seemingly unattained) emphasis of the in-school course.

A further question was whether students' evaluation of being active in the community carries over to (at least reported) inclination to actually do it. The data here revealed that secondary students rather strongly assert that they will be active in their communities. However, from a position of virtual equality on the pretest, the experimental students increased and the comparison students declined. A direct comparison between experimental and control groups showed the difference in change scores to be statistically significant.

Career Exploration. One common critique of adolescent socialization is the inability of many youth to make a smooth transition from school to work. Many teenagers appear to have very little information about the myriad of careers available, and they fall into the trap of thinking that an interest in some activity implies a lifelong pursuit of one single occupation. An often expressed goal of experiential learning programs is to increase a young person's knowledge about work and career options. To learn whether this goal was achieved, students were given the Career Exploration Scale.

The data from this scale show that 24 of 27 experimental groups registered a positive gain, 13 at a level of statistical significance. Measures were also registered by the six comparison groups, with 2 at a statistically significant level. The combined change scores for both experimental and comparison groups were significant, though the absolute level of increase was substantially greater for the experimental groups.

The Career Exploration Scale contains two subscales. The first measures Career Action, or the degree to which students have been actively engaged in exploring careers. The second asks about information they have gained about a career field. Analysis of these subscales revealed that the greater overall increase for experiential students was largerly accounted for by greater gains on the Action subscale. All 27 experimental groups increased on the Action subscale, 16 significantly so. In contrast, no comparison group showed significant gains on this subscale and 2 actually declined. The gains on the Information subscale were about equal for the experimental and comparison groups. Apparently facts can be effectively conveyed either in or out of the classroom. But the experiential approach adds the dimensions of active involvement in potential career choices.

Some interesting differences emerged from examining individual program scores. The highest pretest mean was attained by affluent 12th grades in an independent school and the lowest means by either junior high or low income students. It does appear that active planning and exploring of careers is related to both age and income--with older and more affluent students having the advantage.

Among types of programs, those offering career internships did have the largest increases--most particularly a medical careers program for low income minority youth and a program featuring semester-long, full time internship experiences. However, community study, service, and outdoor programs also showed strong increases even though they had almost no organized or explicit focus on careers. It may be that when young people want to learn about careers, they actively seek such information, on their own, in their field experiences.

In summary, the data discussed in this section support the hypothesis that participation in experiential programs does, or at least can, contribute to the social development of adolescents. Students in experiential programs increased significantly in social and personal responsibility, gained more positive attitudes toward adults and others with whom they worked, and felt more positively toward being active in the community. They also showed increased information about, and activity in exploring, careers. The data also show that such increases are not necessary and inevitable outcomes of any and all experiential programs. There were almost always exceptions to the general trends suggesting there were dynamics operating within the programs that require closer analysis. Such analysis will be presented following the discussion of intellectual development.

Intellectual Development

Theorists of learning and intellectual development from Aristotle through John Dewey to James Coleman have stressed the necessary relation of experience and education. Experience serves both as the source of knowledge and as a process of knowing. Education is of, by, and for experience. The study examined this relation by looking both at academic learning and intellectual development.

Amount Learned. Because the programs varied widely regarding academic objectives it was not practical to directly test the academic learning assumptions through any general test of facts or concepts. Instead, students were asked how much they felt they had learned in their experiential program compared to what they learned in an average class in school. Seventy-three percent of the students reported learning more (41%) or much more (32%) in their experiential program, with 25 of 27 programs having mean responses that rounded off to 4 ("learned more") or higher. The mean responses of the other two were somewhat over 3 ("learned about the same"). Only 9% of the students reported learning less.

While all programs received high ratings on this dimension, there was a rather large spread between the higher and lower ranked programs which invited some speculation about the differences between them. Of the 12 highest ranked programs, 11 had a clearly defined seminar/reflective component; an element which characterized less than half (7) of the remaining 15 programs. Looked at from another perspective, 8 of the 12 programs with highest ratings involved students who might be expected to have a low opinion of regular classes. Four were composed of students in special alternatives for economically and educationally disadvantaged students, and four others involved students who had opted out of regular school for a full semester (one year) to participate in an experience-based program. These factors did not characterize any of the lower-ranked programs. Finally, the higher ranked programs were longer and more intensive than the lower programs.

The data indicate, therefore, that students tend to feel they learn more from experiential programs than from regular school classes and that this is most pronounced when the experiences are longer (at least 12 weeks), more intensive (at least 2 hours daily), include a formal reflective component and, to a lesser extent, involve students who may be disenchanted with traditional classroom programs.

Problem Solving. The primary measure of intellectual development used in the study was the Problem Solving Inventory. This Inventory presented students with 3 interpersonal problemsand led them through the steps in problem solving outlined by John Dewey. Student responses were scored, pre and post, according to the number of alternatives listed, the degree to which they took responsibility for solving the problem, the degree to which they justified a decision according to its consequences, and the level of empathy and complexity of thought shown in the overall analysis of the problem.

On the whole, neither the experimental nor comparison students showed significant increases on the first three indices. This appeared, however, to be more a factor of test weariness than lack of program effect. Only one program showed significant increases in the alternatives and consequences indices, and this program was unique in the degree the students faced problems similar to those in the stimulus stories and to which problem solving per se was a central focus of their seminar sessions. One other finding of interest on these dimensions is that in nearly half of the cases (48%), students selected other than their first alternative listed as their "best choice." This suggests that the request for further alternatives did help elicit the best thinking of students and confirms the common sense notion that one's first impulse does not always represent one's best judgement.

The heart of the Problem Solving instrument is its Empathy/Complexity Index. This Index assesses the ability and/or inclination of the respondents to emphathize with the key "other" in the story, the level of need upon which s/he focuses, and the complexity of analysis applied to the problem. The pretest means were quite similar for all groups, with 27 of the 33 experimental and control groups having means that sounded off to level 4 (conventional, stereotyped thought and concern). On the posttest there was general movement by experimental students toward level 5, a more complex pattern of thought with a focus on relational concerns. This is discussed more fully below.

The Complexity/Empathy Index did clearly discriminate between experimental and comparison groups and between types of experiential programs. In terms of mean changes, 21 of the 27 experimental groups increased, 8 increasing at least a one-third step on the seven point scale. Five of the 6 comparison groups decreased and one showed a non-significant increase.

Most interesting was the pattern between types of programs. To test a hypothesis, programs were divided according to the degree in which students were 1) directly confronted with interpersonal problems similar to those in the stimulus stories and/or 2) where problem solving was a deliberate focus of accompanying seminar sessions. These turned out to be critical variables in promoting change in complexity/empathy. Programs which featured both conditions registered an average mean increase of .59 points. Programs in which all students had one condition and some (not all) had the other, showed an average increase of .22 points. Programs in which both conditions were only partially present showed an average mean gain of .17. Programs in which students had neither element showed an average decrease of -.15.

The data reported in this section suggest that experiential education programs can and do have a positive effect on student learning and intellectual development. This is most strongly the case when the program features a combination of direct experience and formal reflection on that experience.

Summary

To recapitulate what has been said thus far, the pre-post test data clearly show that experiential education programs can have a positive impact on students' psychological, social and intellectual development. Students in experiential programs tended to increase significantly, both in absolute terms and in relation to students in classroom programs, in the major scales employed in this study. These included tests of moral reasoning, self-esteem, social and personal responsibility, attitudes toward adults and others, career exploration, and empathy/complexity of thought.

While the results were extremely positive on a general level, they were not invariably so. That is, on every scale there were important differences among the experiential programs. The discussion shifts, thus, toward examining the dynamics within individual programs that could account for the differences in obtained results.

Findings: Correlates of Effectiveness

The second major focus of the Evaluation of Experiential Learning Project was to identify the program practices which were most effective in facilitating development in students. The factors examined for effect were 1) general program features: nature of off-campus experience, length, intensity, and reflective component; student characteristics: age, grade point average, and socio-economic status; and characteristics of individual experiences including the degree of autonomy, amount of direction, how interesting and varied they seemed to participants, and the like.

The safest conclusion that can be drawn from the data is that no single practice or set of practices guarantees effectiveness from all students. Within every program and every type of program there were students who gained a great deal and others who did not. There were some clear patterns however, patterns which suggest interesting hypothises concerning the effective operations of experiential programs..

Program Features

As described earlier, there were four general types of programs in this study: service, outdoor adventure, career internships, and community study/action. In actual practice, however, few of these were pure types, with elements of one or more (e.g., service) being found in more than one category of program. It may have been this factor as much as anything that resulted in there being no discernible relation between program type and student growth. While service programs appeared to do somewhat better than others on rankings of programs on intellectual and social development, the advantage virtually disappeared in a regression analysis in which other program and student characteristics were controlled for. Other elements, however, did appear to make a difference.

Among other program features, the presence of a formal (and at least weekly) seminar proved to be the single strongest factor in explaining positive student change. This was particularly true on measures of social and intellectual development. Interestingly, there was no clear relationship between a seminar and growth in measures of personal growth such as self-esteem. Perhaps students can make personal meaning of their experiences on their own, but if this meaning is to affect their broader social attitudes and intellectual skills, systematic and directed reflection must be added.

Other factors which consistently related to positive student change were length and, to a lesser degree, intensity. Experiences lasting a full semester (18 weeks) were relatively stronger than shorter experiences, as were those in which students were in field placements 2 or more hours, 4-5 days per week. Of these two factors, that of length was stronger than intensity though even in combination they were not as powerful predictors of change as was the presence of a seminar. It must be emphasized, however, that all of these factors collectively did not predict more than about 5% of the variance (by regression analysis) in pre-post change scores.

Student Characteristics

The student characteristics analyzed were age; grade-point-average, and socio-economic status. These were even less influential than program features, accounting for only about 3% of the variance between pre-post scores. Among the characteristics, only age showed any influence at all, with older students showing somewhat greater growth than younger students, especially on issues of social development. Neither student GPA nor socio-economic status were at all significant in predicting change. One other relevant fact which should be mentioned is that there did turn out to be a positive reation between maturity (as measured by the Complexity/Empathy Scale) and the degree of approval given to an experience-based program.

The general finding of no strong relation between student demographic characteristics and program effectiveness does support one common contention of experiential education: that such experiences can benefit a wide variety, if not all kinds, of students.

Characteristics of Experience

One of the major problems in educational research and evaluation is that the assumption often has to be, or at least is, made that the program has been implemented as described and that all students participating in it have had the same experience. That neither is usually the case can be attested to by anyone closely associated with educational programs. Thus it was an aim of this study to go beyond gross program descriptors and examine more directly the specific experiences of students within the programs. It proved to be a fruitful search.

Compared with program features and student characteristics, the specific characteristics of an individual's experience proved the more powerful predictors of pre-post gains. While the former two categories combined explained no more than 8% of the variance in change scores, the latter consistently accounted for from 15 to 20 percent of variance. The finding lends credence to the notion that individuals experience educational programs idiosyncratically and that this is especially likely to be true in experience-based programs. The specific pattern of impact is outlined below.

The first issue examined was the relation between characteristics of experience and general rating of the program. The characteristics contributing most strongly toward a student rating their program as "excellent" or "good" was that the experiences were rated as being "interesting" and that the student felt he/she was "appreciated for their work."

While feeling appreciated and doing interesting things contributed to favorable program ratings, these characteristics had little or nothing to do with whether students grew from their participation in a program. The factors which contributed most strongly to pre-post gains were, rather, a mixture of features describing a combination of autonomy (e.g., "did things myself") and a collegial relationship with adults (e.g., "discussed experiences with teachers"). The thirteen characteristics which made any appreciable impact on student growth are listed, by rank, in Table 5:2, below.

Table 5:2

Relative Effect of Characteristics of Experiences on Mean Gain Scores for All Tests Combined

Rank	Characteristics of Experience
1	Discussed experiences with teachers.
2	Did things myself instead of observing.
3	Adults did not criticize me or my work.
4	Had adult responsibilities.
5	Developed personal relations with someone on site.
6	Had freedom to explore own interests.
7	Discussed experiences with family and friends.
8	Felt I made a contribution.
9	Had a variety of tasks.
10	Was free to develop/use own ideas.
11	Got help when I needed
12	Made important decisions.
13	Had challenging tasks.

It should be noted that the characteristic that the experiences were "interesting" did not make this list. Even more significantly, characteristics which describe a more typical student-adult relationship (esp., "given enough training to do my tasks" and "I was given clear directions") did not contribute to pre-post gains and, in fact, correlated negatively with them on several scales.

The characteristics of experience were further examined to see if certain ones contributed more to one kind of growth than another. In Table 5:3 the strongest contributors to social growth are listed next to the strongest influences on indices of personal development.

Table 5:3

Relative Influence of Characteristics of Experience on Social and Personal Growth

Social Development	Rank	Personal Development
Discussed experiences with Teachers	(1)	Did things myself instead of observing.
Discussed experiences with family and friends	(2)	Free to develop and use own ideas.
Adults did not criticize me or my work	(3)	Had challenging tasks.
Had adult responsibilities	(4)	Developed personal relations with someone at site.
Made important decisions	(5)	Free to explore my own interests.
Felt I made a contribution	(6)	Discussed experience with teachers.
Had a variety of tasks	(7)	Felt I made a contribution.
Free to explore own interests.	(8)	NS
Developed personal relations with someone at site	(9)	NS

As evident above, it turned out that the characteristics suggesting autonomy (e.g., "free to develop and use own ideas") were more influential in promoting personal growth (e.g., self-esteem) than in social growth (e.g., responsibility). Conversely, the characteristics suggesting a collegial relationship with, and even guidance by, adults, showed the opposite pattern of influence. In short, personal growth was stimulated most by dealing autonomously with challenging tasks while social development accrued more from interaction with adults--as long as it was in a non-student role.

Analysis of student responses to an open-ended question asking them to explain why they rated their program as excellent or good revealed another interesting pattern. The majority of responses described personal benefits to the participant (e.g., "personal sense of improvement") while only a small minority cited more socially-relevant gains (e.g., "affected another person," or "increased understanding of others' needs").

It goes only slightly beyond the data given to argue that the analysis suggests that students will rate a program highly if the experiences are interesting, if they're shown appreciation for their effort, and if they sense some personal gain from the experience. Similarly, students will make the strongest personal gain when they are given some autonomy to act on their own and to use their own ideas. In contrast, positive change in social attitudes and reasoning skills requires more interaction with adults--where the involvement is collegial, not patronizing, and when they can initiate the contact.

In summary, it was found that the most powerful predictors of growth were the characteristics of the experiences of individual students, with features suggesting autonomy being most productive of personal development and features suggesting a collegial relationship with adults and others being most productive of social development. Among program features, the most powerful positive factor was the existence of a regular seminar. Of somewhat less influence was length of program (especially if 18 weeks or longer); even less influential was intensity (better if 2 or more hours 4-5 days a week). There was a small positive relationship between age and growth on social and intellectual measures. No significant relationship was found between student growth and general type of program, on the characteristics of student GPA or socio-economic status.

One final word may be the most significant of all. 95% of the participants in experiential programs rated their own program as either excellent (49%) or good (46%). Perhaps no further comment is needed.

Implications

Jacobo Varela worked for years as an engineer before turning to the study of psychology and sociology in an attempt to find solutions to social problems. He has described the transition thusly:

> At the time I did not realize that the goal of the social sciences is not to solve social problems, but to study them. Reports of brilliant experiments generally conclude not with practical applications, but with pleas for more research. . . . It has often been remarked that the social sciences have erred in emulating the physical sciences too slavishly. I contend they have not emulated them enough. Physical scientists know about the murky connections between 'laws' that apply to ideal conditions and their real-world applications. They know that not every solution can be tested with control groups and pristine laboratory rules: Engineers do not build two Golden Gate bridges to see which one will work best. They build the best bridge they can based on the principles they know.
>
> (Varela, 1978, p. 84)

It would be well to heed Varela's call to identify practical applications of social research.

It is not presumed that this study has definitively answered the central questions of educators. Nonetheless, its findings, combined with others reported within it, do contain implications that merit consideration and application even before "all the facts are in." Central among these are: 1) the demonstrated value of continuing and expanding experiential programs; 2) the importance of a developmental focus for education; 3) the need for direct experience to meet developmental goals; 4) needed changes in teacher education; and 5) the possibility and need for simultaneously working toward personal growth and social improvement.

Value of Experiential Education

The clearest and most significant conclusion of this study is that experiential programs are a powerful educational vehicle for promoting personal *and* intellectual development and can do so more effectively than classroom instruction. The most important implication for secondary schools is that experience-based programs should be adopted and expanded. This is a significant departure from the overwhelming trend in public education to a return to "the basics". The usual--and in our view--narrow meaning of "the basics" is classroom instruction in symbolic representation of experience. The consistent finding that classroom instruction in a traditional mode, as represented by the comparison groups, showed no improvement in personal and intellectual development in contrast to consistent, strong growth for experiential programs should lead educators and the general public to rethink the notion that only classroom instruction is legitimate and effective. The strong positive showing of the experienced-based programs do warrant schools offering such experiences. At the very least, experiential programs currently in existence should be maintained. In many areas of the country, declining enrollment and declining resources have led schools systems to discontinue all but the most traditional classroom instruction. This study indicates that dropping experiential programs is a serious mistake. On the contrary, well-constructed programs, as those in this study, warrant a significant and expanding role in secondary schools.

Developmental Focus for Education

The first implication--that experiential programs are effective in promoting development and should be adopted by secondary schools--assumes that development is a legitimate aim of education.

It is through a peculiar misuse of the English language, or perhaps a symptom of something deeper, that the comprehension of symbols and the manipulation of mediated experience has come to be identified as learning the "basics." Such an interpretation of what is fundamental ignores the source of learning (experience), the nature of the learner (especially development), and the purpose of learning (personal growth and social improvement). Theorists such as John Dewey (1902/1964) and Lawrence Kohlberg (1972) have made cogent arguments for considering development to be the aim of education; research on the effects of schooling (Heath, 1978; McClelland, 1973) has demonstrated the predictive power of personal development (in contrast to academic achievement) for adult success; the present study and others have shown the viability of promoting such development through deliberate educational interventions. It would seem more than reasonable for educators to act on this information. The aim and effect would not be the denigration of more traditional goals, but to imbue them with new vitality and purpose. For experiential educators as well, a focus on development can provide both a framework for organizing activities and a goal--that of promoting social, psychological, and intellectual development.

The Need for Experience

Educators who are serious about development as an aim of education may also have to be serious about adopting experiential methods for achieving that goal. Developmental theory, from the time of Dewey to the present, has stressed that development requires interaction, transaction, conflict, cognitive dissonance, consequential choices and action on behalf of those choices. The more that children and adolescents are isolated from broad, varied, and significant experiences in the social environment, the more must schools encourage such involvement to successfully work toward facilitating development.

Furthermore, if significant experience is truly a critical element in development, it ought not be restricted to isolated doses in the later school years but be a central focus from the elementary years and on.

Finally, the provision of more meaningful participation cannot be met by the schools alone. The findings of this and other studies that experiential programs can promote development must not be overdramatized. It would be foolish to argue or believe that a change in school practice is enough to substantially counter the effects of impoverished experience and prolonged childhood and adolescence. Ways must be found to share the educational mission with the broader society and to provide opportunities for children and youth to be more seriously involved in their communities.

Changes in Teacher Education

> Basing education upon personal experience may mean more multiplied and more intimate contacts between the mature and the immature than ever existed in the traditional school, and consequently more, rather than less, guidance by others. (Dewey, 1938/1972, p. 21)

Education through experience, and for human development, implies a new kind of teacher training. Needed is an emphasis on understanding adolescence and human development in contrast to the current emphasis on teaching a discipline Needed also is increased knowledge of, and involvement in, the wider community by teachers themselves--partly for increasing their capacity to facilitate experiences within it, and partly for their own renewal and continued development.

Personal Growth and Social Improvement

> As the material of genuine development is that of human contacts and associations, so the end, the value that is the criterion and directing guide of educational work, is social. The acquisition of skills is not an end in itself. They are things to be put to use, and that use is their contribution to a common and shared life.
>
> (Dewey, 1934/1964, p. 11)

This entire study began with a reminder of the enormous faith in education which Americans have held from the very beginning of the Republic (p. 1). This faith has always been dual: that education would improve the individual and also make for a more prosperous, more just society. The above statement by John Dewey may serve as a gentle reminder that both goals are essential for either to be achieved. Perhaps one of the greatest strengths of experiential education is that it provides the opportunity to work on both goals simultaneously. As the individual grows from direct experience in the community, so may the community benefit, and not just in the long, from the participation of youth in it. The study indicated that personal growth is a more automatic outcome of experiential education that is social development. To accomplish the dual goals of personal and social improvements, a new kind of relationship between student and teacher is necessary--a collegial mentorship.

There is much left to be learned about human development, about experiential education, and about how to bring about a better society. This study and the scores of others cited within it are not sufficient, do not tell us all we need to know. Yet they provide a beginning and some idea of how to proceed. It is only by proceeding that we will fill in the gaps in what we need to know. Again John Dewey (1932) said it best:

> The sources of educational science are any portion of ascertained knowledge that enter into the heart, head and hands of educators, and which, by entering in, render the performance of the educational function more enlightened, more humane, more truly educational than it was before. But there is no way to discover what is 'more truly educational' except by the continuation of the educational act itself. The discovery is never made, it is always making. (pp. 76-77)

Further Questions for Practice and Research

William Perry is fond of pointing out that people are bigger than the theories used to explain them. In like fasion, issues of education and human development are larger than can be contained in or investigated by one study. Therefore, it would be well to cite some important issues that require further examination.

Impact on Others and the Wider Community

If students are truly involved in significant experiences with real consequences, it should then be possible to detect the effects of their activities on others and on their communities, as well as on themselves. While the assertion is rather commonly made that experiential education programs can contribute to meeting the real economic, social and educational needs of communities and the nation (National Commission on Resources for Youth, 1974), relatively little evidence has been assembled to date. An investigation into the social and economic impact of youth participation would seem particularly important as discussion of the utility of a national Youth Service Program grows more serious (Landrum, 1979).

Who Benefits?

Important questions remain concerning who benefits most from experience-based educational programs--and why. For example, to what degree is maturity, or advanced development, a cause or a consequence of learning through experience? If the exercise of autonomy leads to growth, is the demand for it a factor of the experience or setting itself, or do certain kinds of individuals carve out autonomous roles within the experiences made available to them? Is there a relation between cognitive style and ability or propensity to learn from experience? What are the specific skills and habits that enable a person to learn and grow from experience? Can these be isolated, and then taught and learned in the way that skills in learning from symbols have been? Such questions require a deeper, more focused examination of individuals and specific experiences than was possible or intended in this study.

How to Guide Experience and Reflection

As instructive as it may be to know that experience must be accompanied by reflection, it is not practically useful without more precise information on how best to structure, guide, and encourage such reflection. In addition, more information is needed to identify the kinds of off-campus activities which are most effective for achieving particular developmental and academic goals. One important issue, for example, is whether work-study (and other job experience) programs have effects similar to programs located in the general academic curriculum such as were the focus of this study.

Effect on Academic Knowledge and Skills

The antidote to being information-rich and experience-poor is not to reverse the condition. More insight is needed to understand how direct experience and personal development may enhance the traditional academic aims of schooling--and vice-versa.

Long-term Effects

T. S. Eliot observed: "Only in retrospection, selection,/ We say, that was the day. The critical moment/ That is always now, and here" (1963, p. 57). Similarly, the investigation of the impact of experience on development must be enriched by the study of, in Dewey's terms, "its influence upon later experiences," the degree to which "they promote having desirable future experiences" (1938/1962, p. 27). Clearly it would be important to know if patterns established in the program--of learning from experience, of participating in the community, of exercising autonomy--were continued. Also of interest would be students' assessment of what aspects of their experiences seemed particularly valuable a year or two after as opposed to during or immediately following the experience.

Research Methods

An important problem in the investigation of experiential education has been the lack of appropriate methods and instruments. The Social and Personal Responsibility Scale and the Problem Solving Inventory were developed to help fill this gap. The results indicate they were useful measures and merit further development and refinement.

Results from this study demonstrated that paper and pencil tests can be useful in detecting important effects of experiential education. They also demonstrated some of the limitations of this approach. Evidence from this and other studies suggests that such measures are less than satisfactory for some students, particularly those with a history of negative experiences with testing. In addition, such measures do not adequately capture the small individual changes, the critical incidents, the nuances, the sense and sensibility of experience. Thus additional techniques must be developed and used. Interviews, observations, analyses of journals, ethnographies, and case studies could be used both to triangulate and to see beneath the findings from paper and pencil measures. Such measures could uncover, in Dewey's terms, "the qualitative characteristics of things as they are originally and 'naturally' observed" (1929/1960, p. 90).

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APPENDIX A

TEST INSTRUMENTS AND QUESTIONNAIRES

SOCIAL AND PERSONAL RESPONSIBILITY SCALE

INSTRUCTIONS

A. Look at the sample question below, but don't answer it until you have very carefully read the instructions below.

Almost Always True For Me	Some-times True For Me				Some-times True For Me	Almost Always True For Me
☐	☐	Some teenagers worry about school grades	-BUT-	Other teenagers don't seem to worry about school grades.	☐	☐

B. To answer these questions, there are two steps.

1) First, decide whether YOU are more like the teenagers on the left side who worry about school grades OR the teenagers on the right side who don't seem to worry about school grades. Don't mark anything down yet, but first decide which type of teenager is most like you and go to that side.

2) Second, now that you have decided which side is most like you, decide whether that is almost always true for you or sometimes true for you. If it's only sometimes true, then put an X in the box under sometimes true, if it's almost always true for you, then put an X in the box under almost always true.

C. Now continue to do the numbers below. For each number, you only check one box.

	ALMOST ALWAYS TRUE FOR ME	SOME-TIMES TRUE FOR ME				SOME-TIMES TRUE FOR ME	ALMOST ALWAYS TRUE FOR ME
1.	☐	☐	Some teenagers feel bad when they let people down who depend on them	-BUT-	Other teenagers don't let it bother them that much.	☐	☐
2.	☐	☐	Some teenagers think it's the responsibility of the community to take care of people who can't take care of themselves	-BUT-	Other teenagers think that everyone should just take care of themselves.	☐	☐
3.	☐	☐	Some teenagers are interested in doing something about school problems	-BUT-	Other teenagers don't really care that much about school problems.	☐	☐
4.	☐	☐	Some teenagers let others do most of the work in a group	-BUT-	Other teenagers help in a group all they can.	☐	☐
5.	☐	☐	Some teenagers don't see a point in trying to change school policies with which they disagree because the adults control everything anyway	-BUT-	Other teenagers think it's worthwhile trying to change things at school.	☐	☐
6.	☐	☐	Some teenagers think it's some-body else's fault when things go wrong	-BUT-	Other teenagers think they themselves could be at fault when things go wrong.	☐	☐
7.	☐	☐	Some teenagers seem to find time to work on other people's problems	-BUT-	Other teenagers find taking care of their own problems more than enough to do.	☐	☐
3.	☐	☐	Some teenagers are interested in what other students in class have to say	-BUT-	Other teenagers don't care that much about what other students say.	☐	☐

SOCIAL AND PERSONAL RESPONSIBILITY SCALE (CONTINUED)

ALMOST ALWAYS TRUE FOR ME	SOME-TIMES TRUE FOR ME				SOME-TIMES TRUE FOR ME	ALMOST ALWAYS TRUE FOR ME
9. ☐	☐	Some teenagers are interested in doing something about problems in the community	-BUT-	Other teenagers are not that interested in working on problems in the community.	☐	☐
10. ☐	☐	Some teenagers are the kind of people who spend a lot of time preparing for community assignments, job interviews, school assignments, etc.	-BUT-	Other teenagers don't think about it that much before going there.	☐	☐
11. ☐	☐	Some teenagers would rather not present ideas in a group discussion	-BUT-	Other teenagers feel comfortable in presenting ideas in a group discussion.	☐	☐
12. ☐	☐	Some teenagers almost always let others know when they can't keep an appointment	-BUT-	Other teenagers don't think it's that important to call ahead when they can't make it.	☐	☐
13. ☐	☐	Some teenagers think people should only help people they know--like close friends and relatives	-BUT-	Other teenagers think people should help people in general--whether they know them personally or not.	☐	☐
14. ☐	☐	For some teenagers, it seems too difficut to keep commitments	-BUT-	Other teenagers somehow manage to keep commitments.	☐	☐
15. ☐	☐	Some teenagers' ideas are almost always listened to in a group	-BUT-	Other teenagers have a hard time getting the group to pay attention to their suggestions.	☐	☐
16. ☐	☐	Some teenagers don't think they have much say about what happens to them	-BUT-	Other teenagers think they can pretty much control what will happen to their lives.	☐	☐
17. ☐	☐	Some teenagers don't think it makes much sense to help others unless you get paid for it	-BUT-	Other teenagers think you should help others even if you don't get paid for it.	☐	☐
18. ☐	☐	Some teenagers are good at helping people	-BUT-	Other teenagers don't see helping others as one of their strong points.	☐	☐
19. ☐	☐	Some teenagers don't ask a lot of questions in their job or community assignment because they figure the supervisor will tell them what they need to know	-BUT-	Other teenagers ask a lot of questions just because they are curious about a lot of things.	☐	☐
20. ☐	☐	Some teenagers feel obligated to carry out tasks assigned to them by the group	-BUT-	Other teenagers don't feel that bound by group decisions.	☐	☐
21. ☐	☐	Some teenagers think when good things happen it's because of something they did	-BUT-	For others, there seems to be no reasons--it's just luck when things go well.	☐	☐

SOCIAL AND PERSONAL RESPONSIBILITY SCALE (CONTINUED)

	ALMOST ALWAYS TRUE FOR ME	SOME-TIMES TRUE FOR ME				SOME-TIMES TRUE FOR ME	ALMOST ALWAYS TRUE FOR ME
22.	☐	☐	Some teenagers prefer to have someone clearly lay out their assignments	-BUT-	Other teenagers tend to make up their own lists of things to do.	☐	☐
23.	☐	☐	Some teenagers aren't that worried about finishing jobs they promised they would do	-BUT-	Other teenagers would feel really bad about it.	☐	☐
24.	☐	☐	Some teenagers think they are able to help solve problems in the community	-BUT-	Other teenagers don't think they can do anything about them because a few powerful people decide everything.	☐	☐

Social and Personal Responsibility Scale--Subscales

Duty - Items 1, 20, 23, 12

Social Welfare - Items 2, 9, 13, 17

Efficacy - Items 5, 16, 21, 24

Competence - Items 11, 15, 18

Performance - Items 4, 7, 10, 14

JANIS-FIELD FEELINGS OF INADEQUACY SCALE
(10 Item Version)

INSTRUCTIONS:

Read the sentences below and mark an "X" in the box that best decribes you.

	very often	fairly often	some-times	once in a great while	practically never
How often do you worry about whether other people like to be with you?	☐	☐	☐	☐	☐
How often do you feel sure of yourself among strangers?	☐	☐	☐	☐	☐
When you talk in front of a class or a group of people of your own age, how often are you pleased with your performance?	☐	☐	☐	☐	☐
How often do you feel self-conscious?	☐	☐	☐	☐	☐
How often do you feel that you have handled yourself well at a party?	☐	☐	☐	☐	☐
How often are you comfortable when starting a conversation with people whom you don't know?	☐	☐	☐	☐	☐
How often are you troubled with shyness?	☐	☐	☐	☐	☐
When you speak in a class discussion, how often do you feel sure of yourself?	☐	☐	☐	☐	☐
When you have to talk in front of a class or a group of people of your own age, how often are you pleased with your performance?	☐	☐	☐	☐	☐
How often do you worry about how well you get along with other people?	☐	☐	☐	☐	☐

ROSENBERG SELF-ESTEEM SCALE

	Strongly Agree	Agree	Dis-agree	Strongly Disagree
I feel that I'm a person of worth, at least on an equal basis with others.	SA	A	D	SD
I feel that I have a number of good qualities.	SA	A	D	SD
All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
I am able to do things as well as most other people.	SA	A	D	SD
I feel I do not have much to be proud of.	SA	A	D	SD
I take a positive attitude toward myself.	SA	A	D	SD
On the whole, I am satisfied with myself.	SA	A	D	SD
I wish I could have more respect for myself.	SA	A	D	SD
I certainly feel useless at times.	SA	A	D	SD
At times, I think I am no good at all.	SA	A	D	SD

CAREER EXPLORATION SCALE

IN RELATION TO A JOB OR CAREER FIELD YOU MIGHT LIKE TO ENTER, HOW FREQUENTLY DURING THE PAST 12 MONTHS HAVE YOU:

	Never	Once	Several Times	About Once a month	More Than Once A Month
45. Talked about the job or career field with relatives or friends.	1	2	3	4	5
46. Talked about the job or career field with persons employed in that career field.	1	2	3	4	5
47. Talked about the job or career field with teachers, counselors, or program staff.	1	2	3	4	5
48. Read materials about the job or career field.	1	2	3	4	5
49. Observed activities related to the job or career filed.	1	2	3	4	5
50. Tried out activities related to the job or career field.	1	2	3	4	5
51. Worked in this job or career field.	1	2	3	4	5
52. Thought about racial, sex or other biases that may exist related to the job or career field.	1	2	3	4	5
53. Thought about the steps necessary to prepare for the job or career field.	1	2	3	4	5
54. Learned the range of pay for the job or career field.	1	2	3	4	5
55. Learned the level of schooling or type of training generally required to enter the job or career field.	1	2	3	4	5
56. Thought about the relevance of your current junior or senior high school program to the job or career field.	1	2	3	4	5
57. Learned the employment demand for people in this job or career field.	1	2	3	4	5
58. Learned the chances for advancement or promotion for people in this job or career field.	1	2	3	4	5
59. Thought about the influence the job or career field would have on your lifestyle (for example, your leisure time activities, friends, family life, amount of free time).	1	2	3	4	5
60. Thought about how well the job or career field matches your interests and abilities.	1	2	3	4	5

Career Action: Items 45, 46, 48, 49, 50, 51

Career Information: Items 53, 54, 55, 56, 57, 58, 60

ATTITUDES TOWARD OTHERS

INSTRUCTIONS:

The purpose of this questionnaire is to measure the meaning which an idea or a kind of person has for you by having you rate it by a series of descriptive words. Please make your judgments on the basis of what the kind of person or idea means to you. Do not worry or puzzle over individual terms. It is your first impressions, your immediate responses, that are wanted. On the other hand, please do not be careless, because we do want your true impressions.

Here is how you are to mark this questionnaire. There are seven positions between each pair of words. If you feel the kind of person or idea is very closely related to one end of the scale, place your check mark next to that word (e.g. Hot: X : : : : : : :Cold. If you feel the idea or person is closely related to one end of the scale (but not extremely), place your check mark as follows: Hot: : X : : : : : :Cold. If the idea or person seems only slightly related to one side as opposed to the other (but not really neutral) place your check mark as follows: Hot: : : X : : : : :Cold.

______________________ TERM ______ # OF TERM

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1.	Kind								Mean
2.	Worthless								Valuable
3.	Passive								Active
4.	Important								Unimportant
5.	Weak								Strong
6.	Smart								Dumb
7.	Interesting								Boring
8.	Bad								Good
9.	Popular								Unpopular
10.	Useless								Useful
11.	Beautiful								Ugly
12.	Sick								Healthy
13.	Serious								Humorous
14.	Slow								Fast
15.	Competent								Incompetent
16.	Sad								Happy
17.	Sweet								Sour
18.	Complicated								Simple
19.	Lovable								Repulsive

ADULTS

(1) (2) (3) (4) (5) (6) (7)

1. Friendly :_____:_____:_____:_____:_____:_____:_____:Unfriendly
2. Powerless :_____:_____:_____:_____:_____:_____:_____:Powerful
3. Complicated :_____:_____:_____:_____:_____:_____:_____:Simple
4. Happy :_____:_____:_____:_____:_____:_____:_____:Sad
5. Boring :_____:_____:_____:_____:_____:_____:_____:Interesting
6. Confident :_____:_____:_____:_____:_____:_____:_____:Insecure
7. Honest :_____:_____:_____:_____:_____:_____:_____:Dishonest
8. Changing :_____:_____:_____:_____:_____:_____:_____:Settled
9. Strong :_____:_____:_____:_____:_____:_____:_____:Weak
10. Hopeful :_____:_____:_____:_____:_____:_____:_____:Hopeless
11. Selfish :_____:_____:_____:_____:_____:_____:_____:Unselfish
12. Successful :_____:_____:_____:_____:_____:_____:_____:Unsuccessful
13. Unpleasant :_____:_____:_____:_____:_____:_____:_____:Pleasant
14. Smart :_____:_____:_____:_____:_____:_____:_____:Dumb
15. Unfair :_____:_____:_____:_____:_____:_____:_____:Fair
16. Competent :_____:_____:_____:_____:_____:_____:_____:Incompetent
17. Dangerous :_____:_____:_____:_____:_____:_____:_____:Safe
18. Stubborn :_____:_____:_____:_____:_____:_____:_____:Flexible
19. Kind :_____:_____:_____:_____:_____:_____:_____:Mean
20. Serious :_____:_____:_____:_____:_____:_____:_____:Fun-loving
21. Care too much:_____:_____:_____:_____:_____:_____:_____:Care too little

(1) (2) (3) (4) (5) (6) (7)

BEING ACTIVE IN YOUR COMMUNITY

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1.	Smart								Dumb
2.	Unusual								Usual
3.	Youthful								Mature
4.	Easy								Difficult
5.	Masculine								Feminine
6.	Hopeful								Hopeless
7.	Unpopular								Popular
8.	Clean								Dirty
9.	Important								Unimportant
10.	Boring								Interesting
11.	Strong								Weak
12.	Safe								Dangerous
13.	Practical								Impractical
14.	Modern								Old-fashioned
15.	Selfish								Unselfish
16.	Pleasurable								Unpleasurable
17.	Useless								Useful
18.	Complicated								Simple
19.	Honest								Dishonest
20.	Something I will do								Something I won't do
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	

PROBLEM SOLVING INVENTORY

Complete Protocol

INSTRUCTIONS:
Following are three actual incidents encountered by students in their action learning program. Read each incident carefully and project yourself into the setting as if it is a situation that you must deal with personally. As you read the story, think about what things you would do or say in the situation. Then answer the questions below:

* * *

1. YOU ARE WORKING IN A RECREATION PROGRAM FOR RETARDED TEENAGERS. YOU HELP SUPERVISE THEIR FRIDAY BOWLING "LEAGUE." YOU HELP THEM GET THE RIGHT SIZE SHOES, KEEP SCORE, REMIND PEOPLE WHEN IT'S THEIR TURN TO BOWL, AND HELP GUIDE THE BALL FOR THE SEVERELY HANDICAPPED STUDENTS. ONE OF THE RETARDED KIDS HAS BEEN ACTING PRETTY AFFECTIONATELY TOWARD YOU--TRIES TO HOLD YOUR HAND AND HUGS YOU. TOWARD THE END OF THE AFTERNOON, THE RETARDED STUDENT ASKS IF YOU WOULD LIKE TO GO ON A DATE NEXT FRIDAY NIGHT? YOU SAY YOU'RE BUSY, BUT THE STUDENT PERSISTS, SAYING, "HOW ABOUT THE NEXT FRIDAY, AND SO ON?" WHAT DO YOU DO OR SAY?

1. What's the first thing you would think of to do or say?

a.

2. What other things could you do or say--try to list as many as you can.

b.

c.

d.

e.

f.

3. Look back at what you wrote in No. 1 and 2 and list the letter of the one you think is best ______ Please explain why you chose it.

4. Choose one you rejected and list the letter of the item ________
Please explain why you chose it.

5. Explain what you think is the "real" problem involved in or lying behind the incident.

6. Have you ever had to handle a problem like this before? ____ yes ____ no (27)

PROBLEM SOLVING INVENTORY (Continued)

Three Stimulus Stories

There is a boy in your elementary class named Jerry who is really smart in math and science, but can hardly read and doesn't write well either. Besides that, he is always dirty and messy (looks as if he has never combed his hair). He hangs around you and the teacher a lot. None of the other kids like him, don't like him to play with them, and tease him a lot and gang up on him. Today you walk in the room and some of the kids are again teasing him. What do you do or say?

You are working in a recreation program for retarded teenagers. You help supervise their Friday bowling "league." You help them get the right size shoes, keep score, remind people when it's their turn to bowl, and help guide the ball for the severely handicapped students. One of the retarded kids has been acting pretty affectionately toward you--tries to hold your hand and hugs you. Toward the end of the afternoon, the retarded student asks if you would like to go on a date next Friday night? You say you're busy, but the student persists, saying, "How about the next Friday, and so on?" What do you do or say?

You are a volunteer at a nursing home. Mrs. H. has been in the nursing home for three years. She had a small stroke, and walks with a cane. She is basically independent, but she sometimes needs help getting dressed and undressed. She has the idea that she's getting an apartment soon and will live there alone. No one knows where she got this idea; her daughters know nothing about it, and don't believe she is capable of living alone (cooking, housekeeping, etc.). Mrs. H. is making dishtowels and dishcloths and is very intent on moving. She says to you: "I've got to hurry up and finish hemming these towels because I'm moving out in a few days." What do you do or say?

PROGRAM RATING AND CHARACTERISTICS OF EXPERIENCE

1. What is your overall rating of this program as a learning experience?

Excellent ☐ (1) Good ☐ (2) Poor ☐ (3) Terrible ☐ (4)

2. If you had an excellent or good learning experience, what made it good or excellent?

3. If you had a poor or terrible learning experience, what made it poor or terrible?

INSTRUCTIONS: The following list describes some features of a community field experience. Please describe your particular experience by circling the appropriate number from 1 to 5.

	Practically Never	Once in a Great While	Some times	Fairly Often	Very Often
4. Had adult responsibilities	1	2	3	4	5
5. Had challenging tasks	1	2	3	4	5
6. Made important decisions	1	2	3	4	5
7. Discussed my experiences with teachers	1	2	3	4	5
8. My ideas were ignored	1	2	3	4	5
9. What I did was interesting	1	2	3	4	5
10. Did things myself instead of observing	1	2	3	4	5
11. Given enough training to do my tasks	1	2	3	4	5
12. I was given clear directions	1	2	3	4	5
13. Had freedom to develop and use my own ideas	1	2	3	4	5
14. Discussed my experiences with family and friends	1	2	3	4	5
15. Adults at site took personal interest in me	1	2	3	4	5
16. Had freedom to explore my own interests	1	2	3	4	5
17. Had variety of tasks to do at the site	1	2	3	4	5
18. I never got help when I needed it	1	2	3	4	5
19. Was appreciated when I did a good job	1	2	3	4	5
20. Adults criticized me or my work	1	2	3	4	5
21. Felt I made a contribution	1	2	3	4	5
22. Applied things I've learned in school to my community placement	1	2	3	4	5
23. Applied things I've learned in my community placement to school	1	2	3	4	5

STUDENT DEMOGRAPHIC INFORMATION

INSTRUCTIONS: PLEASE CHECK THE BOX THAT APPLIES TO YOU.

Male ☐
(11)
Female ☐

62. 7th grade ☐ (1)
8th grade ☐ (2)
9th grade ☐ (3) (12)
10th grade ☐ (4)
11th grade ☐ (5)
12th grade ☐ (6)

63. White ☐
Black ☐
Asian American ☐ (13)
Native American ☐
Spanish Surname ☐

In which extra curricular activities do you participate? Check as many as apply to you.

☐ varsity sports
☐ band, orchestra
☐ school newspaper, year book
☐ school clubs or activities, please specify ______________________
☐ youth or church groups, please specify ______________________
☐ cheer leader, dance line, color guard
☐ student government

Are you an--

(1)___"A" student
(2)___Between "A" and "B"
(3)___"B" student
(4)___Between "B" and "C"
(5)___"C" student
(6)___Between "C" and "D"
(7)___"D" student
(8)___Less than a "D" student

What is your father's or stepfather's occupation? PLEASE CIRCLE ONLY ONE NUMBER. If your father or stepfather is retired or deceased, please circle the occupation that he was in most of his life.

1. Trained technician or craftsman, foreman
2. Farm management, agriculture, farmer
3. Service (salesclerk, gas station attendant, school or day care aide,waiter, etc.)
4. Business executive, owner, manager
5. Unskilled work
6. Community service or government service (fireman, policeman, etc.)
7. Secretary, clerical, office work
8. Unemployed
9. Professional (doctor, nurse, lawyer, engineer, teacher, social worker, artist, etc.)
10. Other ______________________

What is your mother's or stepmother's occupation? PLEASE CIRCLE ONLY ONE NUMBER. If your mother or stepmother is retired or deceased, please circle the occupation that she was in most of her life.

1. Trained technician or craftswoman, foreman
2. Farm management, agriculture, farmer
3. Service (salesclerk, gas station attendant, waitress, etc.)
4. Business executive, owner, manager
5. Unskilled work
6. Community service or government service (fireman, policeman, etc.)
7. Secretary, clerical, office work
8. Unemployed
9. Professional (doctor, nurse, lawyer, engineer, teacher, artist, social worker, etc.)
10. Homemaker
11. Other ______________________

APPENDIX B

EXPERIENTIAL EDUCATION: A SUMMARY OF ITS THEORETICAL FOUNDATIONS AND A CRITICAL REVIEW OF RECENT RESEARCH

July, 1979

EXPERIENTIAL EDUCATION: A SUMMARY OF ITS THEORETICAL FOUNDATIONS AND A CRITICAL REVIEW OF RECENT RESEARCH*

Experiential education has, in the 1970's, become an increasingly significant feature in the rhetoric and practice of American education. The arguments made for it extend beyond the rather circumscribed boundaries of ordinary educational discourse, and are more firmly grounded than those of the contemporary crisis literature about schools. Advocates of experiential education raise fundamental issues about the role of youth in society, and question the adequacy of present social arrangements to prepare adolescents for the difficult transition to an increasingly complex and uncertain adulthood. The purpose of this review is to summarize the major theoretical foundations of experiential education, and to critically review the research which has been done on the practice.

This review was written as part of the work of the Evaluation of Experiential Education Project to provide its participants and audience with a single source of background information on experiential education. The Evaluation of Experiential Education project was originated by the Commission on Educational Issues, and is co-directed by Diane Hedin and Dan Conrad of the Center for Youth Development and Research, University of Minnesota. The Project is co-sponsored by the above organization and by the National Associations of Independent Schools, the National Association of Secondary School Principals, and the National Catholic Education Association. It is funded by grants from the Rockefeller Family Fund, the Spencer Foundation, and the General Mills Foundation.

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*This review was prepared by Dan Conrad, with substantial assistance from Diane Hedin.

Experiential education, as defined by this project and as discussed in this review, refers to "school-based experiential programs offered as an integral part of the general school curriculum but taking place outside of the conventional classroom, in which students are in new roles featuring significant tasks with real consequences, and in which the emphasis is on learning through doing with associated reflection." While this review is quite comprehensive in relation to practices meeting this definition, it does not presume to review all forms of experiential education. Readers interested in research focusing particularly on career or work-related programs may wish to consult Searcy (1973) or the National Center for Research in Vocational Education or any of the National Institute of Education's Regional Educational Laboratories. Information on college-level research is available from the Cooperative Assessment of Experiential Learning (CAEL) project.

This review is organized into the following sections: First it reviews the argument that experiential education contributes to a) social, b) psychological, and c) intellectual development. Second, it briefly discusses the contributions which young people can and are making to the society. Third, it considers the differential impact of selected features of experiential programs. Whenever applicable, the theoretical argument is presented first and is followed by a review of related research.

Social Development

Theoretical Case

> Dr. Ruth Underhill tells me of sitting with a group of Papago elders in Arizona when the man of the house turned to his little three-year-old granddaughter and asked her to close the door. The child tried, but it did not move. Several times the grandfather repeated "Yes,

> close the door." No one jumped to the child's assistance. No one took the responsibility away from her. On the other hand, there was no impatience, for, after all, the child was small. They sat gravely wiating until the child succeeded and her grandfather thanked her. It was assumed that the task would not be asked of her unless she could perform it, and, having been asked, the responsibility was hers alone just as if she were a grown woman.
>
> The essential point of such child training is that the child from infancy is continuously conditioned to responsible social participation.... The contrast with our society is very great. (Benedict, 1938, pp. 23, 24)

A 17-year old poignantly gives his perspective on what being a teenager means in 1979;

> ....You ask yourself, "What am I doing? What does any of this matter?" And the answer is, it doesn't matter at all.... All school is, you know, is the great time passer. It's all a big invention to keep kids from becoming anything.... There isn't anything people my age can do that matters in the slightest to anybody.... This country doesn't have the time or the place or the interest in young people. We're a waste to them; that's all. There isn't a single responsibility I could get at my age which the person giving it could honestly call worthwhile. (Cottle, 1979, p. 43)

These two statements, one made in 1938 by an anthropologist and the other in 1979 by a high school student, dramatically summarize the rationale for experiential education from the perspective of social development. Scores of books and thousands of articles add only detail to the basic contention that adolescence in America is essentially a "vacuum of triviality" (Campbell, 1978, p. 855) with enormous immediate and long run social costs.

The litany of immediate costs of arrested social development is distressing and familiar. Rates of running away from home, pregnancy, prostitution, suicide, chemical abuse, and unemployment are high and rising.

Youth under 21 account for about 60% of all arrests for serious crimes, up 1600% since 1951. School vandalism alone is estimated at $500 million per year (FBI, 1978). Nearly 70% of the nation's school systems employ people to perform police functions -- as opposed to less than 10% a decade ago (Brown, 1973). Such figures, embellished with accounts of in-school assaults, rapes, and robberies prompted one cynic to observe that while American schools may not be the "land of the free" they must certainly be the "home of the brave." Perhaps not for all, however, as over a million students drop out each year and in many large city schools fewer than half the enrollees attend regularly (Brown, 1973).

Opportunities for more positive social participation are met with thundering apathy. In 1976, 58% (15 million) of youth ages 18-24 did not vote in the Presidential election, with percentages of non-voting being 72% among black youth and 78% among youth of Spanish origin. In 1976 there were more youth ages 18-24 in local jails (61,510) than there were in the Job Corps or all the federal service programs added together (Landrum, et al, 1979).

Such an accounting, can be misleading. First of all, there are only a very small percentage of young people actually involved in overt acts of violence and defiance. Secondly, the kinds of delinquent acts which are rising most rapidly are those best characterized as a blind striking out against authority. They resemble neither adult criminality nor the ideologically-tinged "revolution" of the late sixties so much as they do the rebellion "without a cause" of youth in the late fifties. Thirdly, there's no evidence that adolescents hold very different basic values than adults (Ausubel, Montemayor and Svajian, 1977). Delinquents may defy authority and violate the law, but fundamentally challenge neither. As for the rest, the "ordinary kids," they are shown again and again to hold highly conventional opinions -- including the opinion that they are not to be trusted to figure things out or to manage things for themselves (Hedin, et al, 1979). If this is comforting to some adults, it is not so to others who decry an adolescent lifestyle characterized by privatism, cynicism, hedonism, boredom and aimlessness. The prevailing restlessness is akin to that described by C. Wright Mills as stemming from a undefined feeling of threat with little awareness of why or from what (Mills, 1959). The description of the dilemma could be extended, but to little point. The issues are why the problem exists , and what can be done about it.

There are essentially two lines of analysis offered as a guide to understanding the adolescent predicament -- not mutually exclusive and more neatly separated on paper than in life. The first stems from adolescent theorists such as Erik Erikson (1968), John Mitchell (1975), and Gisela Konopka (1973). They argue that at the heart of the problem lies an inaccurate and incomplete understanding of the needs, impulses, and tasks of adolescents. Viewed alternately as overgrown children and as pre-adults, adolescents hang (or are hung) suspended between two worlds with no significant roles to play or tasks to perform. Such misunderstanding (often shared by adolescents themselves) has serious consequences. Adolescent's needs to develop and express idealism are ignored or suppressed, as are needs to unleash creative energy, broaden activities and associations, select internal standards of judgement and conduct, realize responsibility, and express commitment. Instead they are kept isolated and dependent and gathered daily into adolescent folds. Here experience is narrow, docility is rewarded, and organized team sports are offered as important character building devices. If they are released to the world it is to "youth type" jobs characterized by menial duties and lack of opportunity for satisfaction or advancement (Barton, 1978).

If this summary is somewhat overdrawn for brevity and effect, it is nonetheless accurate enough to provide a reasonable explanation for the failure of the shallow educational reforms of the sixties and to predict a revolt against the return to the basics in the late seventies. Both approaches are patchwork devices that make no allowance for the adolescent need structure which is no less an important part of social dynamics for being misunderstood or ignored.

A second line of analysis incorporates the above and asks questions beyond it. If prolonged adolescence and extended dependency status are harmful, why are they allowed to continue? If young people are isolated from broad social experience and association and from significant participation and responsibility, and if such isolation is largely (or even partly) the source of so much trouble, why isn't it broken down with all deliberate speed? If a more adequate vision of adolescence is available, why isn't it heeded? One interpretation is that the problem is more one of impotence than ignorance.

A starting place for this analysis is again suggested by C. Wright Mills. In The Sociological Imagination (1959) Mills wrote persuasively of the need to distinguish between "personal troubles" and "public issues." His essential point was that the persistent existence of a large and pervasive social problem can neither be understood nor effectively solved by focusing on individual failure or even on specific organizational weaknesses. The source of the problem must be sought in the structure of society itself: its institutional relationships, its value system and, especially, its opportunity structure. Cognizant of this distinction, some analysts of the social scene point to fundamental incongruities in the structure of society. The case has been stated most succinctly by Ernest Campbell (1969) who asserted that the basic problem is that society does not need the young or perhaps does not recognize a need for them. If adolescence is prolonged, it's not from any delay in physical maturation. If schools are where the young largely are, it's not from a free choice among options. If formal schooling is started at age three and extended until age 16 or 18 and older, it's not convincingly justified by citing the educational demands of an advanced technology. What is persuasive is the simplest argument of all; youth must be kept off the job market, must be prevented from competing with adults for scarce jobs. Society's method for accomplishing this is to keep the young in school -- through persuasion if possible, by law if necessary. David Ausubel says it plainly:

> ....We should remember that the primary motivation (for extended schooling) has been the inability of society to provide jobs for adolescents. It is mere sophistry to pretend that they are psychologically too immature to find a place in our economy....(We have) a unique economic situation, in which the productive labor of adolescents is not only unnecessary for cultural survival but also represents a threat to the interests of adult workers. In practically all other cultures, adolescents participate vigorously in the economic life of the community or begin to prepare for some occupational pursuit, and in many of the less favored cultures, the economic contribution of the child is demanded even before pubescence. (Ausubel, at al, 1977, pp. 290, 291)

What makes the problem more serious, even a tragedy, is its conjunction with a value system which defines the significance of a task by its price tag and the value of a person by his or her salary or wealth. One could generate an impressive list of difficult challenges (e.g., in athletics) which some youth are meeting, and an even more impressive list of ones they could meet. But there are few which are extensively offered, and fewer that boast a social stamp of acknowledged importance or serious significance.

There are four common responses to what has been described above. One is to discount it and ignore it. A second is to listen to the litany and basically assent to the analysis, and then to ignore it. Seemingly some find comfort in the very exercise of description and interpretation; as if charts, tables and somber monographs put it all within the expected scheme of things, within the proper (if regrettable) framework of immutable natural order. A third is to recognize the problems and acknowledge their source, and then accept nothing short of a new value system and economic structure where small is beautiful and work is its own reward. A fourth is to recognize the need for change and to try effect it within the boundaries of the immediately possible and thereby exert pressure for more fundamental change.

At least some advocates of experiential education fit into this fourth category. The basic argument is that while there may not be enough jobs for youth there is clearly enough work. There are significant challenges for young people which could be incorporated into the meaning and practice of formal education. Doing so would energize students and envigorate schools. Schools could facilitate the kinds of learning and socializing experiences which would meet the real needs of adolescents and through them, society. Students would then be better prepared to take their adult places and to pursue their careers as workers, parents, and active citizens.

To further these social goals, numerous individuals and groups have urged schools to extend the depth and breadth of experiences available to adolescents. They would make all of life and all of the community a source of learning and doing. Among the more articulate voices being raised is that of Urie Bronfenbrenner:

> ....the most needed innovation in the American classroom is the involvement of people in responsible tasks on behalf of others within the classroom, the school, the neighborhood, and the community. The full potential of the motivational process here discussed will remain unplumbed and seriously underestimated so long as the social setting in which these processes take place is limited to the conventional classroom with its homogeneous groupings by age, sex, and, often by ability and social class as well. (Bronfenbrenner, 1970, p. 156)

An imposing array of national panels and commissions have enunciated a similar position. Among these are the Panel on Youth of the President's Science Advisory Committee (Coleman, J., 1974), the National Commission on the Reform of Secondary Education (Brown, B.F., 1973), the National Committee on Secondary Education (National Association of Secondary School Principals, 1972), the National Task Force on Citizenship Education (Brown, editor, 1977) and the National Panel on High School and Adolescent Education (Martin, 1976). A quote from the last will stand for the rest:

> It is clear, however, that the secondary school, by offering only a limited number of sanctioned learning experiences, has detrimental effects on the education of many adolescents.... In sum, despite the numerous types of learning that can and frequently must take place in the community or the "real world," the only sanctioned educational experiences of most 12 to 18-year-olds are those which occur in the secondary school classroom. This equating of formal schooling with education is not only functionally inaccurate but also damaging to individual development. Although empirical data on the specific results of various nonacademic experiences are lacking, the problems stemming from the conventional secondary school's inability to be all things to all adolescents are clear enough to warrant designing complementary educational approaches. Thus the Panel recommends

> that the U.S. adolescent education system actively integrate youth into the broader community by providing a wide variety of out-of-school or "experience-based" learning opportunities. (pp. 49, 52)

One must not be misled by the contemporariness of these recommendations. It may be recalled that similar recommendations were commonly made in the 1930's. In the 1938 Yearbook of the National Council for the Social Studies (West, 1938), Paul Hanna wrote:

> Our youth will learn appropriate social behavior and develop social responsibility to the degree that we provide them with participation in those human activities in the community which by their very conditions demand creative and cooperative social action for solution. Social action for our age demands that youth have an opportunity to participate in cooperative projects designed to improve some aspect of community living. Actual experience is the *sine qua non* for social action. (p. 138)

Nearly 30 years earlier, in *The Moral Equivalent of War* (1910), William James had proposed the conscription of the entire youthful population of the United States into community service. This was prescribed as a means, outside the context of war, of raising a generation with a new sense of "civic discipline." Through involvement in public works, young people would experience "self-forgetfulness" rather than "self-seeking." None would be "flung out of employment to degenerate because there is no immediate work for them to do." The childishness would be "knocked out of them" to be replaced by "toughness without callousness, and by healthier sympathies and soberer ideas." All would be involved in "an atmosphere of service and cooperation and of infinitely more honorable emulations."

The educational foundations were laid even earlier. Some 2500 years ago Aristotle made abundantly clear his position that social development required active involvement. In a famous passage he wrote that:

> ....intellectual excellence is for the most part produced and increased by instruction, and therefore requires experience and time, but moral excellence is the product of habit.... We become just by doing just acts, temperate by doing temperate acts, brave by doing brave acts....states of character are formed by doing the corresponding acts....It makes no small difference....whether we form habits of one kind or another in our youth; it makes a very great, or rather all the difference (Quoted in Frankena, 1965, pp. 55,56).

Evidence From Research

The idea that experiential educational programs are needed to promote social development is rich in general argument and authoritative assertion. The rude question must still be asked whether there is empirical evidence to lend credence to the claims and support to the recommendations. Consistent with the nature of social research, the empirical studies are neither as global as the above nor as consistently convincing. The studies reviewed in this section are ones which focused on specific elements of social development and were conducted on school-based experiential programs or on programs which featured activities similar to those offered by them. In several instances, the studies cross developmental realms (social, psychological, intellectual) and in those cases the study is reported in the area of primary application.

The impact of schooling. Part of the argument from the perspective of social development is that of negative implication. Serious research into the social impact of formal schooling has detected only minimal, neutral or negative effects. The long standing hope that universla public education would be the vehicle for achieving upward mobility, equal opportunity, and fundamental social harmony has been deflated if not exploded by studies such as that by Coleman (1966) and Jencks (1972). Neither could find any important school effect on life chances or social careers. Studies trying to pinpoint some correlation between student performance and adult performance have been equally negative (McClelland, 1973). While it may help to have gone to school, it doesn't matter much where it was, what was studied, or how successful one was there (Hoyt, 1965).

In a large and methodologically sophisticated study, Jennings and Niemi (1974) explored the political character of adolescence in terms of the nature and sources of political values and behavior and the kind of preparation young people have had for political participation. Partially because adolescents were so removed from actual participation, and their political orientations so poorly defined, they found it nearly impossible to differentiate the influences of family, society and the school. As for the latter, while some school impact was found for some subgroups (especially minorities), the stronger finding was of "feeble consequences of formal instruction" (p. 319), and that the divic curriculum was "redundant for the majority" (p. 328). "Indeed," one contributor concluded, "the increments are so miniscule as to raise serious questions about the utility of investing in government courses in the senior high school, at least as these courses are presently constituted" (p. 191). Similar findings and conclusions regarding classroom civic instruction were reported from studies in Sweden, West Germany, England, and Italy (Farmer and German, 1972).

A recently completed study followed the school and life careers of 2,000 young men from 87 schools over an eight year period from 1966 to 1974 (Bachman, O'Mally and Johnston, 1978). The major purpose of the research was to describe adolescent life changes and to identify the causes of such changes.

An important secondary purpose was to assess the impact of schooling on these changes. The study began as the youth were entering the tenth grade and ended five years after high school. At the end of these eight years, the researchers were unable to isolate any significant school effects. As the study represents the most wide-ranging, sophisticated, and most recently completed effort of this sort, its conclusions merit special attention. In summing up the findings, they wrote:

> It would be deeply satisfying at this point to be able to report that we had indeed isolated substantial and significant school effects, and that we had discovered certain school characteristics which were linked to such effects. Unfortunately, that is not what we are able to say. Instead, we must report that our basic conclusion is rather similar to the conclusions drawn from other careful attempts to discover school effects: we have not uncovered differential school effects consistent and substantial enough to provide any clear guidance for the improvement of public high schools in the United States.
>
> What sets the present study apart from earlier work is that this failure to find differential high school effects is not limited to the more typical dimensions of test scores, or educational and occupational aspirations and attainment. On the contrary, our inability to find important differential school effects extends across a broad array of criterion dimensions -- especially those noncognitive dimensions which have sometimes been seen as the more promising domains for discovering school effects. (p. 219. Emphasis in text)

The position of the researchers was not that schooling had no effect at all (e.g., students do learn to read and compute there), but that they "failed to find evidence for school *socializing* effects" (p. 225, emphasis added). They argued that the chief social effect of school seemed to be that of sorting out and credentialing. Three policy implications were drawn from the overall findings. These were: 1) ending the anti-dropout campaign; 2) moving to alternative forms of credentials (such as competencies) and greater focus on socializing functions; and 3) to require less time in formal school settings and to facilitate more out-of-school experiences for students. The entire six volume study concludes by favorably citing the Coleman panel's (1974) recommendation for broader experiences for youth and class with these words:

> Our present findings may be seen as consistent with these views expressed by the Panel on Youth. It seems that recently too much has been expected of formal schooling, and too much has been claimed for it. Schools may not be very likely to produce the broad socializing effects that have sometimes been claimed. Rather than assuming or demanding such effects, and then viewing the lack of such effects as evidence of school failure, perhaps we should develop a reduced and more realistic set of expectations for schools. Students, educators, and the rest of society could all be the beneficiaries (p. 237).

The evidence, then, suggests at least the minimal conclusion that students are not likely to be harmed by temporarily leaving the classroom to become engaged in more active, experiential educational programs. However, the positive social effects of these experiences are more difficult to pin down. There are, however, some fascinating hints as discussed below.

Studies on older adolescents. The widest ranging and most sophisticated studies on the effects of broadened social experience are now relatively old, involved primarily post high school youth, and featured full time, intensive experiences. Of these, the most complete and systematic study was done on Volunteer Work Camps sponsored by the American Friends Service Committee (Riecken, 1952). Volunteer work service camps had their origin in Europe during the 1920's as a response to the challenge of postwar reconstruction -- physical, moral, and social. The idea was imported to this country in 1934, when the American Friends Service Committee organized a volunteer group of 58 young men and women to install a new water system in a Pennsylvania mining town. The idea grew and has endured into the present. The work camp experience involved two months of service-oriented activity (almost always involving physical labor) in a disadvantaged area, with intensive reflection/discussion, and in a social context of communal living. The purpose of the experience was to provide needed services and, in the words used to describe the very first camp, "to give young people an opportunity to acquire first hand experience of physical, social, and industrial problems; to combine this knowledge with and to obtain it through work for a community; and to explore the possibilities of initiating social changes by nonviolent techniques" (Riecken, 1952, p. 27).

A major study was conducted in the 29 camps that operated in the United States and Mexico during the summer of 1948. Participants were administered attitude questionnaires before the experience, immediately following, and 10 months afterward. These were supplemented by a more intensive study of a subsample of the group. The participants were mostly middle-class, college-aged youth who already possessed the kinds of attitudes the camps were designed to instill. Nonetheless, the final report stated that the "campers became enduringly less prejudiced, more democratic, and less authoritarian. They also became more service-oriented in their choice of vocations, more 'concerned' to help their fellow men, better adjusted, less anxious, more autonomous, and less frustrated. (It was further) concluded that campers' personal maturity had increased -- they had become more self-confident, less dependent, less hostile and had, in short, developed greater ego-strength" (p. 156).

Several aspects of this study require special mention. First, the findings from the questionnaires were corroborated through interviews, standardized tests, and observations of actual behavior. Second, the findings held up through the post-camp follow-up study ten months later. Nonetheless, there were factors which limit the degree to which the results can be generalized to high school experiential programs. The participants were a homogeneous group of college-aged youth and clearly atypical in their social orientations. Also, the experience was for 24 hours a day, within a communal setting and with intense, often dramatic, activity -- features which cannot readily be duplicated in most high school programs. In terms of the research itself, while the design was strong in most respects, it did rely heavily on project-designed, open-ended questionnaires, and the study was done without any controls or comparisons other than to establish attitudinal differences between campers and other youth at the onset of the experience.

The Volunteer Work Camp movement had several offspring, among them the Encampment for Citizenship. The Encampment programs began as work-service programs intended to involve a wide spectrum of youth and to combine service with the deliberate study of social problems and democratic principles. Following World War II, the service activities were dropped entirely with the thought that the experience of building a democratic community among a heterogeneous group of 100 young people for a six-week period would supply ample opportunity to test and apply the democratic principles being presented through formal instruction. In 1955, Herbert Hyman undertook an intensive study of the Encampment using essentially the same design, and even the same instruments, as used in the 1948 study of the Friends' work camp (Hyman, Wright and Hopkins, 1962). The results (and strengths and weaknesses) of the study were strikingly familiar: the already well-disposed participants were more service-oriented in career choice, more aware of and concerned about social problems, more inclined to political participation, more respectful of others, and more strongly supportive of basic democratic values. A follow-up study from years afterward showed lasting effects both in attitudes and behavior. Interestingly, while the Encampment featured lengthy and intensive formal instruction, the evaluators concluded that "there is strong evidence that the most salient feature of the total Encampment experience was the community life. This does not mean that the eeucational program was ineffective or unimportant. But it does mean that what was psychologically central to the campers was the group experience in democratic living...." (Hyman, et al, quoted in Black, 1962, p. 309).

Since 1961, over 70,000 people have served in the Peace Corps (Landrum, 1979). Remarkably little hard data has been collected on what these volunteers have given and gained. However, an intensive and systematic study of the Peace Corps experience was conducted on one of the first groups to go overseas (Smith, 1966). It involved 27 men and 17 women who served for two years as teachers in Ghana. The study employed a variety of paper and pencil tests given pre and post, as well as interviews and staff ratings. The data showed a shift from the first year's all-out enthusiasm to a more "veteran" mentality in the second year, in which volunteers were sustained by their principles rather than by their enthusiasm. In terms of personality and attitude change, they became more tough-minded and realistic, more autonomous and independent of authority, showed greater self-insight and sense of self-worth, had raised aspirations for the future, and showed greater interest in careers involving service to others.

Each of these three studies was conducted on older and somewhat atypical youth who were involved in very intensive experiences. Their critical relevance to the present study is that they lend support to the basic assumption that deliberate interventions can positively effect the social attitudes and development of young people. Whether less intensive, school-based programs involving younger adolescents can have a similar impact is more problematic and is the question examined below.

School-based programs. The longest standing and most widely implemented off-campus programs sponsored by schools are those falling under the general rubrics of work experience and career education. A serious assessment of the related research would require more space than can be given here (see Searcy, 1973) and would largely involve kinds of experiences deliberately excluded from the present study. However, a career program which does relate to this study is that of Experience Based Career Education (EBCE). EBCE programs vary somewhat from school to school, but share the common features that students are largely removed from regular classroom programs for a semester or more, and may spend up to 80% of their time in community settings as observers and/or interns in selected occupational fields. The programs have been extensively evaluated by four of the National Institute of Education's Regional Educational Laboratories and by the Educational Testing Service. Most of the research has been formative in nature, but with some summative findings which show 1) that EBCE is extremely popular with strong support from parents, students, and field supervisors; 2) that EBCE students show no losses in academic achievement as measured by standardized tests of basic skills; 3) that EBCE students show gains over non-EBCE students in knowledge about careers, attitudes toward and involvement in career planning; 4) EBCE graduates report learning to communicate with adults and peers, to plan careers, and report increased self-confidence, reliance, and sense of responsibility (Bucknam, 1976; Watkins and Corder, 1977). While the findings suggest that EBCE has some value they are not strong or complete enough to constitute a completely convincing case wor their efficacy. The data is limited to self-reports and indicators of "no academic harm," and the studies fail to address other important issues of program impact. Even within this narrow and conservative focus, the students in EBCE are compared only with students receiving no career education at all thereby limiting the conclusions that can be drawn on the impact of direct experience itself on career development. These research gaps were apparently no accident. As one "insider" noted: "The original design for the ETS study included a comparison group of students enrolled in classroom career education and conventional vocational education programs. Resistance from EBCE and NIE staff, however, forced the elimination of that aspect of the study.... Such are the realities of evaluation research...."(Hamilton, 1978, p. 34).

Rigorous research on experiential programs that are integrated into the general secondary school curriculum is rather limited, with the exception of programs focusing on psychological development and which are discussed in the next section of this review. There have been, however, a number of exploratory studies of experiential courses and programs that indicate positive impact on social development. Blackmer and Irwin (1977) evaluated the off-campus educational programs in 20 independent schools and found there was a high degree of agreement among students, teachers, off-campus supervisors, and parents that the major benefits of the programs were related to the personal and social development of the students, such as learning to get along with adults, developing self-reliance, and taking on adult responsibilities.

Studies of volunteer service and social action programs which are integrated into the general curriculum have asked more focused questions and used tighter research designs. Wilson (1974) found that students who engaged in some kind of political and social action in the school or wider community became more open-minded as measured by the Rokeach Dogmatism Scale and more politically efficacious as measured by Campbell's Cale on Political Efficacy. Button (1972) found increases in political knowledge and in feelings of political efficacy among both white and black high school students who did field work regarding the political structure of their city. The only change in the control groups was an increase in political opinion, a change also found among black students in the experiential group. In a second school, where the students were black and Mexican-American, no attitudinal changes were found, though the experiential students did increase significantly in political knowledge. Stockhaus (1976) in a study of students engaged in volunteer service in their community (minimum of 20 hours a semester as a part of the social studies program) found no significant differences between the experimental and comparison groups with regard to political and social efficacy. Participants did, however, show significant improvement in their sense of social responsibility , community responsibility and in altruism as compared with non-participants ($p < .05$). The author concluded nonetheless that even the statistically significant changes were probably too small to be of any practical difference.

Three other studies show similar trends to the above, and also serve to illustrate the kinds of design problems which have plagued research in the natural setting of the school. Jones (1975) investigated whether students who become involved in a community activity through their social studies class show more interest in social and political affairs as a result. In general, she found that student involvement correlated with a slight decrease in amount of attention paid to government but positively related to increased interest in community activity. However, the study reported no information on what the students did, or for how long, etc., and the findings were based on an author-designed questionnaire that appeared only loosely related to the dependent variables under scrutiny. Marsh (1973) evaluated a social studies course which allowed class time for 25 seniors to work in a community on an issue of their choice. Among the author's conclusions were that the course appeared to have promoted a general interest in politics and a willingness to act in support of political issues. However, the experimental group was not randomly assigned, and a post-only design was employed making it impossible to determine if the perceived effects reflect pre-existent group differences, or were the result of classroom instruction, the experience, outside events, maturation, or some combination of factors. Finally, Corbett (1977) investigated a one-year high school Community Involvement Program. The aim of the program was to lead students to a commitment to the solution of social problems through a combination of direct experience in social service (10 hours per week) and a classroom component (two hours per week). Students were tested pre and pos- with an array of author designed and standardized instruments and results compared with two similar groups. The results were mixed and rather complex, but can be roughly summarized by noting there was a decrease in sense of social responsibility and political efficacy (among first-time volunteers), no change in dogmatism or intolerance of ambiguity, and non-significant increases in view of human nature and on moral reasoning. More significant increases were elicited by the California Psychological Inventory, especially on subscales relating to sense of well-being, socialization, empathy, and tolerance.

Even more interesting than the findings themselves were the author's speculation on why little effect was detected. One set of reasons illumines problems inherent in conducting any research in schools: no control over sample size (very small in this study); no strict control group was available; some of the students had previous volunteer experience and some had not; experiences were of varied intensity and quality; and not all students completed all the test instruments. A second set of speculations centered on the nature of the program itself. The experiences of the students were lengthy and sometimes intense, but given the nature of volunteer service in social agencies there were seldom very clear aims for the activities and few observable results. In addition, the classroom component was not always very clearly related to the students' specific experiences so did not necessarily meet the need for reflecting on them.

In summary, the literature on the social development of adolescents suggests that changes are needed in the adolescent role and in the means by which young people make the transiton to adulthood, and that greater involvement in tasks of significant responsibility is one visable means for promoting healthier social development. Whether such growth can be significantly fostered by limited school-related programs is less certain. The research evidence, while promising, is not overwhelmingly convincing and must be supplemented by wider ranging and more adequately designed interventions and studies.

Psychological Development

> Whether by design or otherwise, the school cannot help but play a role in the personality changes of adolescence....and since the school has to play some role in this development, it might just as

> well be as constructive as possible. For to the extent that the developmental tasks of adolescents are or are not fulfilled, we acquire or fail to acquire mature citizens who are capable of carrying on and improving the culture. (Ausubel, 1977, pp. 426-427)

Theoretical Case

Need for attention to Psychological Development. That formal education should have a positive impact on the personal growth (or psychological development) of individuals is not a revolutionary idea. That schools should attend to this as a deliberate aim, however, is not exactly conventional wisdom. To Sprinthall and Mosher (1976), this idea is at the center of an emerging new paradigm for thinking about the purposes and practices of education.

Part of the impetus for schools to deliberately promote psychological development can be attributed to recent research documenting the intricate interweaving of all aspects of human behavior and development. The research has convincingly shown that psychological development can neither be considered apart nor assumed to automatically ensue from the traditional educational goals of producing informed citizens, transmitting knowledge, or preparing young people for careers. Research into citizenship behavior, for example, has demonstrated that active participation is linked to such psychological variables as self-esteem (Stockhaus, 1976) and level of moral reasoning (Haan, Smith and Block, 1968). Studies of altruistic behavior have shown that young persons who engage in prosocial acts are persons with the psychological characteristics of being "relatively self-confident.... advanced in moral reasoning as well as in role-taking skills and empathy" (Mussen and Eisenberg-Berg, 1977, p. 159). Studies of academic achievement have also shown the importance of the psychological dimension. Purkey (1970) on an extensive review of the literature, concluded that "overall, the research evidence clearly shows a persistent and significant relationship between the self-concept and academic achievement" (p. 15). Further, studies of career satisfaction and effectiveness have found psychological maturity to be a far more powerful predictor of vocational success than school achievement or particular courses taken in school (Osipow, 1979).

The above findings become particularily disturbing when linked with research documenting the largely negative impact of schooling on the psychological development of adolescents. Numerous studies have reported negative effects on such variables as self esteem, interest in learning personal autonomy, and the like (Coleman, 1961; Jackson, 1968; Stephens, 1967). Other studies show similar deficiencies in American schools. Only about one-half of American adults fully attain Piaget's stage of formal operational reasoning and only five percent reach the highest stage in Kohlberg's stage-model of moral reasoning (Kohlberg and Mayer, 1972). The clear implication of these findings, or at least that drawn by many proponents of experiential education (and others), is that psychological development is a valid and necessary aim of education and that it must be deliberately promoted. It cannot be assumed to occur as a natural by-product of traditional school emphases and practices.

Theories of psychological growth and development are many and varied, and a complete review is well beyond the intent and scope of this study. This review, accordingly, will be limited to theories of psychological development which are most directly relevant to experiential education and to those theories which have guided significant research on the effects of such programs. The theorists most commonly cited include those fitting under the rather imprecise labels of developmental stage theory and humanistic psychology.

Developmental Stage Theory. Proponents of experiential education and of developmental psychology share a common heritage in the work and writings of John Dewey. Earlier and more clearly than any other, Dewey formed the idea that individuals move through stages of development, that individual experience is the key to such movement, and that development is what defines education and what should be its deliberate and primary aim (Dewey, 1938/1972). A generation or more of research by developmentalists such as Piaget, Kohlberg and Loevinger has built on Dewey's ideas and has produced a more precise picture of what characterizes the stages and what kinds of experiences are most appropriate and most effective in promoting growth at each stage of development.

Psychological theories of development vary in focus, but share the central concepts of stage, structure, and interaction. Individuals grow and develop in a series of qualitatively distinct stages. Movement to a new stage is characterized by a structural transformation in which the individual achieves a new and more comprehensive conceptual system or "schema" for interpreting experience and making sense of the world. The pattern of development between stages has been likened to "the transformation involved in the sequence from an egg to a catepillar to a butterfly. Each stage of development is unique and separate, yet each....builds upon and is (in fact) dependent upon a prior stage" (Sprinthall, 1978, p. 2). The changes that occur are "irreversible, general over a field of responses, sequential and hierarchical" (Kohlberg and Mayer, 1972, p. 486). While there are rough correlations between age and stage, there is no direct or causal relationship. Development is neither automatic, nor wired into the organism, nor inevitable. Whether or not growth occurs depends upon a certain maturity and readiness within the individual, and upon the kind and quality of the person's interactions with the environment. This emphasis upon the role of experience in promoting development is both a key to understanding developmental theory itself and in understanding its importance to the case for experiential education. This link can be more adequately made following a summary of the specific conceptions of development, especially as they apply to adolescents.

Cognitive Development: Jean Piaget. The most important source of knowledge about cognitive growth and development is the work of Jean Piaget. Piaget has outlined four distinct stages of cognitive development in childhood and adolescence: sensori-motor stage, pre-operational or intuitive stage, the concrete operational stage, and the stage of formal operations.

The latter is of greatest concern here, because it is only during adolescence that the individual is able to achieve formal operations, i.e., develop the capacity to think abstractly and without reference to concrete materials. The cognitive structure at this stage enables one to hypothesize about relationships, to consider "if-then" statements, and to draw out the implications of concrete experiences. The person at formal operations can employ a systematic approach to problem-solving and apply such speculation to real social problems -- an application aided by the ability to understand how others see issues and to imagine the consequences of alternative actions. In other words, they have gained the capacity to make creative use of the rich stimuli offered by real experience.

One important finding of research into cognitive development is that while nearly all secondary students are able to attain formal operations, only half or less actually do so (Kohlberg and Gilligan, 1971). The rest "stabilize" at concrete, dualistic levels of thinking. This means that most teenagers experience adolescence and enter adulthood with a retarded capacity for understanding the world and their own experience, and without the necessary cognitive tools for achieving and exercising personal autonomy. The failure of so many students to achieve their clear potential stands as an indictment of existing educational methods and as good reason for devising more effective practices.

Moral Development: Lawrence Kohlberg. Building directly on the work of Piaget and Dewey, Kohlberg has focused his attention on how a person makes sense of, and judgments about, his social world. Through a long series of field interviews, Kohlberg has concluded that children and adolescents do think about issues of social justice and that the ways in which they think about them forms a series of distinct stages of development. The pattern is made up of three basic levels and six sequential orientations or stages: preconventional level (obedience and punishment orientation, and naively egoistic orientation); conventional ("good boy," "nice girl" orientation, and authority and social order maintaining orientation); post-conventional (contractual legalistic orientation, and conscience or universal ethical principal orientation).

There is both a philosophical and empirical link between Piaget's stages of cognitive development and Kohlberg's stages of moral development, with research showing that a person's level of moral reasoning tends to lag slightly behind his/her general stage of cognitive functioning. Thus, while approximately 50% of American adolescents can think at the formal, abstract level, only between 25 and 30% of adults reach the "post conventional" level of moral reasoning (Kohlberg and Gilligan, 1971).

That this should be the case should be no great surprise. The development of the capacity for moral reasoning requires that one be stimulated by discussions of value questions and challenged by direct involvement in issues of social justice. Neither in school nor out of it are adolescents commonly engaged in the kinds of experiences which demand, and which could elicit, their highest capacity for moral thought (Kohlberg, 1973).

Ego Development: Jane Loevinger. The cognitive and moral dimensions of development described above are subsumed under a comprehensive system of ego development created by Jane Loevinger. Like other ego and identity theorists, Loevinger's framework represents a "holistic view of personality and is concerned with impulse control and character development, with interpersonal relations, and with cognitive preoccupations, including self-concept" (Loevinger and Wessler, 1970, p. 3). Each of these several dimensions are related to the ego which, in Loevinger's view, is a kind of master trait of human growth involved in coordinating, choosing, selecting and directing a person's activities. Loevinger has found that the ego functions in distinctive ways at different stages of development. Each of the stages builds upon the previous stage so that the ego is increasingly able to take in more aspects of a given situation, have a greater tolerance for complexity, see things more broadly, and select from a greater variety of possible actions.

Loevinger postulates eight stages of ego development which correlate reasonably well with other developmental schemes (Table 1, p.). Studies indicate that elementary children tend to cluster at stages 1-1 to 1-3, which means they have a system for understanding self and others that is concrete and stereotyped, and a style of relating to others that is characterized by impulsiveness, dependence and exploitiveness. Teenagers, while sometimes lower and potentially higher, tend to cluster at the next two stages (△ through 1-4). Persons at this level have a system that is more abstract and self aware, but are still highly conformist. They tend to be preoccupied with appearance and superficial niceness, exhibit stereotyped thinking, and have an interpersonal style dominated by a need for acceptance and belonging. Loevinger's scheme continues on through three additional stages of ego functioning. However, her research (and that of others) has indicated that adults tend to stabilize at a level (between 1-3 and 1-4) only slightly higher than that of teenagers.

Personal Development: Erik Erikson. Erik Erikson has long been a dominant figure in the study of human development, and his contribution must be considered in any discussion of the psychological development of adolescents (see especially Erikson, 1968). Although Erikson approaches development from a psychoanalytic perspective, there are striking parallels between his work and that of the developmentalists discussed above. Kohlberg, for example, has referred to the relationship between the development of identity in Erikson's model and his own formulation of the stages of moral reasoning (Kohlberg and Gilligan, 1971). In turn, Erikson has commented on the importance of formal operational reasoning for resolving the central tasks of adolescence and, in a discussion in Geneva, he and Piaget acknowledged the mutual compatibility of their work (Tanner and Inhelder, 1959).

Drawing on insights gained from clinical practice and anthropological field studies, Erikson translated Freudian theory into a more complete and less deterministic theory of personal development. Unlike the stages postulated by Piaget and other developmentalists, Erikson's stages are not conceived of as structures operating within the person, but represent central problems of experience which must be faced and resolved at particular periods of life. While these age-related problems are never solved completely, the degree of resolution effects the individual's confidence and competence to cope with the conflicts of later stages.

Erikson has written profoundly and prolifically on the critical nature of the adolescent years, characterizing this period as the turning point, the critical moment, in the individual's search for an answer to the question, "Who Am I?" The stage task for these years is that of identity formation versus identity diffusion. If the individual has undergone a period of experimentation and crisis, and out of this developed a relatively stable and coherent sense of where he is going in life, then an identity is achieved. There may, however, be foreclosure on the search should the adolescent adopt a social identity without a period of struggle, of questioning, and of active experimentation with different roles. At the other extreme, identity diffusion characterizes those who try out a number of roles but who neither demonstrate basic commitments nor seem actively involved in arriving at such commitments. It follows that Erikson's famous concept of the adolescent moratorium is not to be a time of aimless floating, but a period of significant experience and serious reflection on such experience (Marcia, 1966; Miller, 1978). The Table which follows illustrates the relationship between the developmental whoms of Erikson and the other theorists discussed in this section.

Implications for Educational Practice. One clear result of the theory and research of developmental psychology is to add meaning and credence to a most commonplace Americanism. From pulpit to pep rally, Americans are chided for living below their potential, told they use only one-tenth of their brain power, and urged on to some higher plateau or other. However regretfully, developmentalists have added substance to the charge by demonstrating that most people are operating at lower levels of cognitive, moral and ego

TABLE 2:1

Stages of Personal, Ego, Moral, and Cognitive Development

	Erikson	Loevinger	Kohlberg	Piaget
Age (approximate)	Psychological Crises	Pattern of Ego Functioning	Level of Moral Development	Cognitive System
(1)	Trust (vs. mistrust)	Presocial (1-1)	Egocentric	Sensorimotor
(2)	Autonomy (vs. shame)	Simbiotic		
(3)				
(4)		Impulsive (1-2)	Obedience - punishment orientation	Intuitive, or preoperational
(5)	Initiative (vs. guilt)			
(6)				
(7)		Self protective (△)	Instrumental, Relativist orientation	
(8)				
(9)		Conformist (1-3)	"Good boy," Interpersonal conformity orientation	Concrete operational
(10)	Mastery (vs. inferiority)			
(11)				
(12)				
(13)				
(14)		Conscientious (1-4)	Authority, rule and social order orientation	
(15)				Formal operational or abstract
(16)	Identity (vs. identity diffusion)			
(17)		Autonomous (1-5)	Social contract, Human rights and Welfare orientation	
(18)				
(19)				
(20)		Integrated (1-6)	Universal ethical principles, conscience orientation	
(21)				
(22)	Intimacy (vs. isolation)			

functioning than is possible for them. By delineating realms and levels of development, they have done more than give substance to an old saw; they have offered a fundamentally new aim for education. Furthermore, their analysis of how growth occurs suggests rather clear guidelines for the practice of education.

One important implication of developmental theory, particularly for this study, is that growth occurs through significant interaction with the environment (experience). In his last writings, Dewey abandoned "interaction" for "transaction" to stress even more actively and powerfully the complete interdependence, the necessary mutuality of person and environment, the degree to which a person was a dynamic participant in his/her own development (Geiger, 1958, pp. 15-18). Keying off the concept of interaction, developmental theorists and practitioners alike stress the importance of the active process in learning. Activity, role-taking, experimentation and real experience serve as key words in describing the dynamics of growth. The central argument is that learning and development are interactive processes. Passively absorbing knowledge while sitting in a classroom is not a sufficient condition for stimulating growth. Movement to higher stages of cognitive, moral, ego or personal development requires active doing combined with active thinking. An essential element of growth-inducing experience is conflict; conflict which stretches the child's existing thinking and induces him to seek more adequate ways of reorganizing his experience and action.

Piaget has stated the case for active learning this way:

> As far as education is concerned, the chief outcome of this theory of intellectual development is a plea that children be allowed to do their own learning....You cannot further understanding in a child simply by talking to him. Good pedagogy must involve

> presenting the child with situations in which he himself experiments, in the broadest sense of the term -- trying things out to see what happens, manipulating symbols, posing questions and seeking his own answers, reconciling what he finds one time with what he finds at another, comparing his findings with those of other children... (quoted in Miller, 1978, p. 245)

Kohlberg recommends that students become involved in the social and moral functioning of their schools and that "teachers should challenge students with the moral issues faced by the school and community as problems to be solved, not merely situations in which rules are applied mechanically" (Kohlberg and Hersh, 1977, p. 57).

Erik Erikson focuses attention on the adolescent's absorption in the question "Who Am I?" The answer, one's "identity", is not found through aimless wandering, but is forged through experimentation and risk, through trying out half-gained competencies, through testing different selves. It is refined through reflecting on one's self in relation to real and imagined models, and is verified by assessing the reactions of others to these attempts at self definition (Erikson, 1968).

The process of development is described by all these authors is a drama of encounter and contemplation, which must be played out in a real arena with real choices and with real consequences. It is not well-served by the typical school program that turns out students who are, in one author's words, "information rich and action poor" (Coleman, 1972, p. 435).

Humanistic Psychology -- Self Concept. The case for experiential learning from the perspective of psychological theory would be strikingly incomplete without reference to humanistic psychology and particularly its emphasis on concept.

The concept of the self has an ancient tradition, but is no more precise for all that. Notions of what it refers to and what gives it shape extend from the mystical and signally inward idea of the soul in religious tradition, to the idea of self as a product of social interaction as, for example, in G.H. Mead (1934). Today, the self, in its broadest formulation, is usually taken to refer to an organized set of beliefs, theories, or perceptions about the self which involve both categories (son, soldier, shoemaker) and attributes (tall, fat, good, loved). In a recent attempt to update (and bring greater respectability) to the idea, Epstein (1973) reviewed the major writings on the nature of the self-concept. The summary he provided adds needed precision to the idea. In addition, it highlights the importance of experience in the development and functioning of the self, an importance not lost on the proponents of experiential education. The characteristics which the major theorists commonly stress are these:

1. It is a subsystem of internally consistent, hierarchically organized concepts....
2. It contains different empirical selves....
3. It is *a dynamic organization that changes with experience*. It appears to seek out change and exhibits a tendency to assemble amounts of information....
4. It *develops out of experience*, particularily out of social interaction with significant others....
5. The self-concept...*organizes the data of experience, particularly experience involving social interaction*...and facilitates attempts to fulfill needs while avoiding disapproval and anxiety.
6. There is a *basic need for self-esteem* which relates to all aspects of the self-system, and, in comparison to which, almost all other needs are subordinate. (p. 407, emphases added)

The need for self-esteem, described above, is the characteristic of the self-system most discussed and researched. Purkey (1970) reported a number of studies, all of which found self-regard to decrease with years in school. Bachman, et al (1978) found that self-esteem tended to rise (gradually but steadily) only after students left school either by graduating or by dropping out. These two key findings: 1) that traditional school programs have a largely negative impact on self-esteem and 2) that healthy self-concept depends upon experience and / or social interaction -- are central to the case for experiential learning.

Awareness of the negative impact of the school experience on self-esteem has prompted humanistic psychologists such as Carl Rogers to suggest ways to reverse the trend. In an important essay on education, Rogers (1969) enumerated several general principles of learning that are consistent with his view of human nature. He stated: "Human beings have a natural potentiality for learning. They are curious about their world, until and unless this curiosity is blunted by their experience in our educational system....This potentiality and desire for learning, for discovery, for enlargement of knowledge and experience, can be released under suitable conditions" (p. 157). Among the conditions he emphasized were relevance for the person, challenge to self-organization, participation and choice in the learning process, self-initiation and self-evaluation. He further stated his position that:

> Much significant learning is acquired through doing. Placing the student in direct experiential confrontation with practical problems, social problems, ethical and philosophical problems, personal issues and research problems, is one of the most effective modes of promoting learning....I have always been impressed with the fact that brief, intensive courses for

> individuals on the firing line....are especially effective because the individuals are trying to cope with problems which they are currently experiencing (p. 162, emphases in text).

The point emphasized by experiential education (and underscored by Rogers) is that an accurate self-concept and positive self-esteem are not just attitudes but accomplishments. They must be grounded in reality, based on concrete experience. A positive self-esteem divorced from achievement is mere mythology conjuring up images akin to that of the "born painter" who does not paint. David Norton (1976) wrote: "possibilities must first be acqualized....One must first act and then assess the result -- in short, introspection is retrospection" (p. 86). Educators concerned about self-esteem must be equally concerned about providing opportunities for achieving such esteem through real experience lest they be engaged in what Bruner (1960) caustically called "the production of self-confident fools" (p. 65).

Summary: Psychological Theory and Experiential Education. Despite the existence of scattered statements such as by Rogers above, the need for experiential learning is not so much derived from the theories and theorists quoted as by the reality of prevailing adolescent roles in school and society. It is a central contention of both humanistic and developmental psychologists that growth requires challenge, conflict, and significant experience. It is the reality of modern society that such experiences are not commonly available to young people. If they were, schools would not need to deliberately promote them. Since they are not, and since formal schooling is the central fact of life for most adolescents, then, to the extent that educators accept psychological development to be a legitimate aim of schooling, they must work to provide the conditions for such development. Advocates of experiential education suggest that their approach provides some of these conditions. In the following section several attempts to test this contention will be examined.

Evidence from Research

Developmental Psychology. The field of developmental psychology has generated a rich body of research of significance to experiential education. This might be expected given the centrality of direct experience in the ideas of the major theorists: Dewey's reference to experience as "the means and goal of education" (Dewey, 1938/1972, p. 89); Piaget's stress on learning as an interactive process; Kohlberg's emphasis on active role-taking, etc. The following review focusses on educational interventions aimed at deliberately promoting psychological development, and highlights the role of direct experience in such efforts.

Directed Discussion. Among the earliest developmental interventions were several designed to stimulate growth in moral reasoning. A series of studies by Blatt and Kohlberg indicated that directed discussions of moral dilemmas could promote developmental growth in young adolescents. Blatt (1979) stressed three basic principles in his studies:

1. exposure to cognitive conflict;
2. exposure to the next highest stage of reasoning (+1 modeling);
3. an atmosphere defining moral disagreement and clarification as legitimate.

Blatt's major finding was that the classroom experience led to a significant increase in moral judgment maturity, and that the increase was still evident in a follow-up study done one year later. While the group mean rose significantly, several individuals in the group stayed the same or declined slightly. This finding of variable effect is common in these studies and will be discussed later in this review.

The promising results of the Blatt studies have proven difficult to duplicate. Beck, Sullivan, and Taylor (1972) also used the directed discussion method and found no significant effects immediately after treatment. In retesting one year later, however, the experiemental group was found to use significantly more Stage Five reasoning than the control group. But, as Lockwood has noted, "the researchers acknowledge difficulty in interpreting this 'lag effect' [and] their study cannot adequately determine if this apparent delayed impact is a result of the treatment" (Lockwood, 197-). Similarly, Schaffer (1974) used directed discussion and +1 modeling and reported no significant impact on either student's moral reasoning (Kohlberg) or ego development (Loevinger). What increases did occur were on those who scored lowest on both the pretests.

Several explanations have been offered for these mixed results. One is that Blatt's "success" may reflect his own background and expertise (Rest, 1974). Another is that the discussion method is not equally appropriate to students at all levels of development, and that a more varied approach is needed (Hedin, 1979). A third, and following from the above, is that the discussions need to be accompanied by more direct and engaging experiences (Newmann, 1975). This view is consistent with Kohlberg's own observation that movement to the highest stages of development "requires some experiences of moral responsibility and independent moral choice" (Kohlberg, 1973, p. 500). Whether extended classroom discussions are sufficiently engaging for most students is questionable at best. Kohlberg's own involvement in moral education has increasingly featured more active and consequential experiences for students. This is most clearly illustrated by his promotion of the "just community" approach to education. The "just" school integrates curriculum and moral discussion with participatory democracy. Students help create and maintain the rules and program structure through regular community meetings where major issues are posed, debated and, hopefully, resolved. Preliminary research into this more experiential form has indicated significant and positive change in both moral reasoning and in the development of a sense of the school as a moral community (Wassermann, 1977).

Deliberate Psychological Education. An even clearer link between experiential education and the goal of psychological development can be drawn from a number of studies loosely joined under the title of developmental education. Under the direction of Norman Sprinthall (University of Minnesota) and Ralph Mosher (Boston University) a number of interventions have been implemented and carefully researched. Though the specific programs have been many and varied, each has shared the basic goal of promoting psychological maturity; and each has been based on the assumption that this is best accomplished when the educational intervention involves a balance between experience and reflection and where the students are involved in genuine role-taking and significant interpersonal learning (cognetta and Springhall, 1978). Beyond these common elements, the specific treatments are somewhat difficult to categorize. For purposes of this review, however, they are grouped according to the kinds of experiences which were featured in the practicum component of the interventions.

Erickson (1973) and Paolitto (1975) combined classroom instruction with extensive interviewing experiences in the community. In Erickson's program the focus was on value and social role questions related to female development, and the interviews were closely tied to a curriculum exploring these same issues through literature, discussion of relevant topics, and a study of Kohlberg's stage theory. Positive gains were reported on Kohlberg's Moral Maturity Scale, Loevinger's Ego Development Scale, and Spence's Attitudes Toward Woman Scale. Paolitto's junior high students discussed moral dilemmas, created many of their own, and were involved in extensive role-playing. In addition, something approaching half the total program time was spent in interviewing persons in various occupational and other roles regarding moral issues they encountered. Her treatment group gained significantly in moral maturity when compared with controls (a design feature absent in the Erikson study).

A number of developmental interventions have concentrated on having teenagers learn and then use counseling skills. Among these are studies by Sprinthall (1974), Dowell (1971), Mackie (1973), Rustad (1974) and Chioso (1976). Each of these programs used a seminar and practicum format. The seminar sessions included readings, films and discussions on counseling and communications, and involved extensive student practice in role-taking and empathetic listening. The practicum involved counseling peers around real problems and issues. The measures of effect included Rest's Defining Issues Test (DIT), Loevinger's sentence completion test, various measures of listening skill and empathy, and a variety of qualitative measures. In each case the researchers reported positive gains in both moral maturity and ego development. Typically the ego gains were from roughly level 1-3 to level 1-4 on the Loevinger scale signalling "a shift from other directedness to the beginning of a more integrated inter-reliant and less egocentric stage" (Sprinthall, 1974, p. 11). Changes in moral maturity, while positive, were not as dramatic or as often statistically significant.

Each of the interventions reported above involved experiences that approach but fall short of the criteria for significant experiences established for this study. The interviews in the first group involved students with adults outside the classroom, but not in roles with significant responsibility. The second group involved students in significant role-taking experiences, but usually in the classroom with other members of the same counseling course. Whether discussing personal problems with friends, even if more skillfully, is a new and consequential adolescent role is somewhat doubtful (Kohlberg, 1972).

A third series of studies involved teenagers as cross-age tutors, teachers, and helpers in settings outside the secondary school classroom. Among these were studies initiated by Sullivan (1975), Atkins (1972), Alexander (1977), Cognetta (1978), Greenspan (1974), and Preuss (1976). These interventions differed from many tutoring programs in that the cross-age experiences occurred as an integral part of a seminar-practicum course centering on psychological content and skills and aimed at deliberately promoting psychological growth in the older tutor or helper. The first four studies involved students as moral educators to younger students. Alexander, Cognetta, and Sullivan reported positive and significant gains in both ego and moral development in the student moral educators. Atkins' students gained in moral reasoning but not on ego development. Greenspan's students worked with preschoolers in the context of a child development course. Growth in ego development was not found, but students did increase in moral reasoning and complexity of cognitive understanding. Preuss involved junior high and older elementary students in a nursery school practicum and found no change in either ego or moral development, leading her to question the appropriateness of the model to younger students, especially pre-teens.

Hedin (1979) carried the developmental model one logical step further than the above studies by designing and assigning the practicum experiences to correlate with the developmental level of the students: the higher the level, the less structure and the greater demand for responsibility and for role-taking skills. Her students were involved in significant experiences as tutors, teachers, health counselors, etc., in a variety of community settings. This "matching" model proved to be an effective approach with significant gains recorded in both moral reasoning and ego development. Hedin's intervention and study was a significant extension and modification of the developmental education model in several ways. First, because of the deliberate matching; second, in that what was most consciously matched was each student's community experience rather than what was said in the seminar (as, for example, in the +1 modeling format); and, thirdly, in that the seminar sessions were based on and were an extension of the practicum, rather than the more usual reverse emphasis.

In a recent article, Ralph Mosher (1977) summarized the findings of developmental education and research. Among his conclusions were: first, it seems it is possible to stimulate moral and ego development through deliberate educational interventions; second, factors leading to moral development at least appear to be a combination of a) exposure to and interaction with higher stage reasoning, b) exercise of empathy and role-taking, and c) action in behalf of chosen moral and social goals; third, the effective educational experiences are a) discussion of moral dilemmas, b) role-taking experiences, and c) social service and social action. The above list is not exhaustive of the possible experiences or combination of experiences that may promote development, but it clearly suggests an important role for direct experience as a factor in educational programs aimed at fostering psychological development in adolescents.

Self-Concept Research. The self-concept (and its most salient aspect, self-esteem) has been a tantalizing and frustrating variable for educational researchers. On the one hand, is the consistently demonstrated relationship between a positive self-concept and the central goals of education (Purkey, 1970; Bloom, 1976). On the other is the repeated finding that it is a highly stable characteristic, not readily affected by educational interventions (Bachman, et al, 1978). Nonetheless, the improvement of self-esteem continues to be a prominently listed aim of educational programs, particularly of experiential ones, and a common focus of serious research.

Outward Bound programs represent one form of experiential education in which the enhancement of self-esteem is a common and explicit goal. Many research studies have been conducted on such programs, most of which measured changes in self-concept and related characteristics such as locus of control, confidence, and assertiveness. The studies have consistently found significant and positive changes in self-esteem as measured by a variety of instruments and research approaches. Winkie (1976), for example, using control groups and a relatively tight design, found significant increases in both moral reasoning (using Rest's DIT) and self-concept (using the Tennessee Self-Concept Scale - TSCS) among the experimental group, though there was no correlation between gains in the DIT and the TSCS. Nye (1976) also found increases in the experimental group's TSCS score (vs. a comparison group) though, in an attempt to confirm this finding through instructors' assessments, he found no correlation between their observations and participant's gain scores. For the most part, however, the outward bound studies have had glaring weaknesses in instrumentation and design. Limitations include over-reliance on self-reports, lack of adequate controls or comparisons, faulty statistical analysis, and the like. In separate reviews of outward bound research, Godfrey (1974) and Shore (1978) warn us to view the findings of positive impact as promising but highly tentative because of severe design and instrumentation problems.

A similar conclusion must be drawn from an analysis of the impact on self-esteem of school-based experiential programs. Stockhaus (1976) found no increase in the self-esteem of high school students involved in community service, nor did Saunders (1976) in a study of junior and senior high school tutors. On the other hand, Gartner, Kohler, and Riessman (1971) and Haggerty (1971) both found significant increases in the self-esteem of tutors. Perhaps significantly, the first two studies were among middle and upper-middle class students and the latter among lower and working class youth identified as being especially alienated. In one study of a full-time, nine week experience in a state hospital, Sager (1972) found that high school age youth serving as helpers gained significantly in self-esteem as measured by the TSCS. Similarly, Kelly (1973) found that college freshmen engaged in helping retarded children on a face-to-face basis underwent greater positive change in self-concept and related dimensions than did students who helped in less intense service projects or, even more strongly, than students who did not serve as helpers at all.

In summary, the research evidence does lend credence to the claim that experiential programs can have a positive impact on the psychological development and self-concept of adolescents. What is less clear are; which are the most appropriate measures, what particular forms and formats of experiential programs are most likely to have a positive impact, and what kinds of students benefit most from the various kinds of experiential programs.

Intellectual Development and Academic Learning

> Today as yesterday we may leave experience to other institutions and influences and emphasize in education the contributions it is supremely fitted to make....Young people do not spend all their time in school.... In general education, therefore, we may wisely leave experience to life and set about our job of intellectual training. (Hutchins, 1956, pp. 69-70)

The case for experiential learning may be read as a rejoinder to Hutchins. One response, as outlined in the first section, is that if students "do not spend all their time in school" they are spending an ever increasing portion of it there, with deleterious effects on their social and psychological development. A second is that "experience," "life," and "intellectual training" are not separable; that for the school to succeed in the "contribution it is supremely fitted to make," both breadth and depth of student experience must be encouraged. That is the argument unfolded in the present section.

Theory

> In the experience I have of myself, I find enough
> to make me wise, if I were a good scholar.
>
> (Montaigne, 1595/1958, p. 354)

This statement by Micheal de Montaigne suggests two central connections between experience and learning. The first phrase, "in the experience I have..." suggests the need for breadth and depth of experience as a ground for learning. The last, "if I were a good scholar," emphasizes that learning from experience requires conscious attention to the skills involved in drawing wisdom from it.

Having Experience. One of John Dewey's major contributions was to demonstrate the necessary connection between learning and experience. When pressed for a technical definition of education, he offered: "It is that construction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of future experience" (Dewey, 1916/1966, p. 76). Simply stated, education is of, by, and for experience. With the caveat that "experience" has a richer meaning than "activity" or mere "occurrance," this definition suggests that the phrase "experiential education" may be essentially a tautology. Experience is a vital component of education in at least the following ways.

As a method of learning. A starting point is the Jamesian, Deweyan, Piagetian, Polanyan, et al. view that knowing requires that the individual interact with the environment. For some kinds of learning, such as learning to swim or ride a bicycle, the requirement is obvious. Here a non-experiential method of learning is difficult to even imagine. "Having done" is implied in the meaning of "having learned." A similar connection holds for more complex learnings. From Aristotle to the neo-Freudians doing is the preferred -- even exclusive -- means of acquiring character traits such as bravery, industry, steadfastness, and the like -- notions of "good citizenship" as a by-product of studying the westward movement notwithstanding. For any subject matter, in fact, one can meaningfully speak of an "experiential" approach to it.

James Coleman (1979), in discussing methods of teaching language, reading, and math, pointed out that for each "there are ways of learning...that are experiential learning, and there are ways that are not" (p. 8). A second language, for example, can be learned by memorizing its vocabulary and rules of grammar. The effective use of the language, however, can be more readily (though sometimes more painfully) acquired experientially, "by being in the linguistic environment, by trying and failing and finally succeeding, in making oneself understood and understanding others" (p. 7). For any subject area, the experiential approach provides "solid experience base, in one's own life, for the very symbolic modes that one subsequently uses to transmit information bypassing experience" (p. 8).

The need for experience is often most readily acknowledged when the consequences of learning (or not learning) are most clear. Pre-occupational training is one example. The practice of requiring student teaching, trade apprenticeships, on-the-job training, medical internships and other professional residencies illustrate that classroom instruction as a method has limits, that for some learnings there is no reasonable substitute for practical experience.

As a guard against meaningless abstraction. John Dewey (1916/1966) admonished educators to make learning "active," and to tie instruction to the interests and to the experiences of the learner or fall victim to "the standing danger that the material of formal instruction will be merely the subject matter of the schools" (p. 8) and strike no ground of meaning in the life of the student. The function of a concept or generalization (or even a pithy saying) is to summarize the data of experience in a way that both effectively conveys and gives coherent (or even new) meaning to the information given. "But," as Olson and Bruner (1974) have pointed out, "there are limits in the degree to which such representations, whether in language or other symbolic systems, can substitute for or extend ordinary experiences. As a summary of experience, they are indeed powerful...to the extent that they summarize no experience, they convey little or no information" (p. 147). All too often, formal instruction piles abstraction upon abstraction as if "the remoteness of a given concept could be diminished by the elaboration of its equally remote antecedents and presuppositions" (Norton, 1973, p. 46). The result may not be knowledge, but only the appearance of knowledge. As Norton (1976) elsewhere observed, "... the great enemy of integrity is not falsehood but -- ironically -- the attractiveness of foreign truths, truths that belong to others" (p. 9). To Dewey, such second-hand learning is "dead and barren," and consists of "degenerate reminiscence of what someone else once formulated on the basis of the experience that some further person had, once upon a time, experienced" (Dewey, 1902/1964, p. 354).

As an extension of one's world. That some instruction can be labelled "degenerate reminiscence" may not so much reflect blind ineptitude in teachers as it does the narrow experience base of learners. An impoverished experience base results in impoverished interests and questions, and modern adolescents too often display just such a privation. A form of experiential education deliberately geared to increasing the associational and experiential base of students is community study. In such programs, students have encounter persons, events, settings, neighborhoods, issues that they might not otherwise experience. The need to deliberately promote such contacts, Coleman (1979) observed, "lies in the 'sanitizing' of a young person's environment which has resulted in part from the conscious attempts by parents to protect their children from bad experiences, and in part from the general movement of society toward institutionalization of the young in schools" (p. 9). He might have added that teachers themselves are institution-bound. Community study broadens their horizons as well, and exposes them and their students to information, experiences, and sources of learning not available in the usual school setting. By using the community as classroom, the school promotes wider experience and adds resources for both teacher and student that would be the envy of the most heavily endowed academy.

The value of an extended experience base is not limited to increasing the quantity and quality of stored information. It provides the student with a broader range of situations (and with real dilemmas) in which to practice and develop survival and problem solving skills. In reviewing the research regarding children's problem solving skills, Brown and Deloache (1978) were struck by the apparent need for broader experience. They concluded:

> This accumulation of knowledge about how to think in an increasing array of problem situations is an outcome of experience with more and more complex problems. Young children's insensitivity to their problem-solving potential is the result of lack of exposure to such situations, rather than age per se...
>
> (pp.30,31)

As a stimulus for personal learning. In as strong a plea as Dewey (1902/1964) ever made for personal growth as an aim of education, he wrote:

> To the growth of the child all studies are subservient; they are instruments valued as they serve the needs of growth. Personality, character, is more than subject-matter. Not knowledge or information, but self realization, is the goal. To possess all the world of knowledge and lose one's own self is as awful a fate in education as in religion.
>
> (p.343)

To regard personal growth as an aim of education is likely to sharpen one's discontent with the sterile environment of the classroom--and the blandness of adolescent life outside the school. Returning to Coleman's (1979) article on the function of experiential education:

> It is intense experiences, critical events, that give us knowledge of ourselves, make us less fearful of our faults, more able to address them in a straightforward way, without fear or favor. This the school was never designed to do.
>
> (p.8)

Moreover, Coleman argues that the sterile life in schools is now matched with a similar "vacuum outside the school". He suggests that more engaging and powerful experiences should be added to the adolescent's repetoire:

> It has come to be time to design learning environments, whether in school or in another setting, that contain those experiences that move one along the path to self knowledge.
>
> (p.9)

Another meaning of personal knowledge is that of "making knowledge one's own" as suggested by Michael Polanyi (1962). Somewhat oversimplified, his notion is that all real knowledge is ultimately personal knowledge: it goes beyond the objective facts to a sensing of the cues, nuances, hints, interrelationships that give life and utility to facts, skills and concepts. In commenting on Polanyi's work, Hennessey (1970) noted:

> Such awareness, and such knowledge, come about, in part, through trial and error, and the almost instantaneous correction that man's perception and cognitive apparatus enables him to make. To understand, the human animal needs practice in the integration of cues and the projection of meaning.
>
> (p. 106)

In this sense, the value of a community placement, for example, is not just in straightforward application or in gaining new facts or skills but in gaining a "feel" for a setting or task, for sensing patterns and interactions, internalizing a subculture, developing a personalized verstehen of a particular reality.

These four elements in the relationship between experience and education do not exhaust the possibilities. They serve, however, to illustrate how "the experiences I have of myself" are potential sources of learning or even wisdom. Whether or how this potential is realized depends on what one does with ones experiences.

Being a scholar of experience. To say that it is possible to learn from experience does not imply that learning automatically accrues from experience, the example of the man who has seen everything and learned nothing being all too familiar. Similarily, to assert that all learning must at some point and in some degree be tied to experience does not mean that the experiential method is the only means of acquiring useful knowledge. Experience may be miseducational as well as educational (Dewey, 1938; 1972). And the "experiential" approach is but one method of education. Effectiveness in employing the method may be furthered by an understanding of its nature.

a. As a mode of learning.

David Olson and Jerome Bruner (1974), in an insightful article, suggested that humans have available to them three different modes of learning. They can learn through contingent experience, through observation of models, and through symbolic systems. One of their major points is that while there are important variations within the modes, they "converge as to the knowledge they specify, but they diverge as to the skills they develop" (p. 132). There are common units of information about a legislative body, for example, that can be learned either through verbal and written symbols, through observation, or through direct experience. But there are even more important differences. The first is in the quantity and quality of incidental learnings (including attitudes) that will be gained concerning the object of knowledge (here, the legislature), oneself, and the enterprise of learning itself. Secondly, and even more significantly, the skills used to extract the knowledge through each mode are radically different. Thus, an educator must be concerned not only with the knowledge s/he wishes to convey, but with the "mental skills that are developed in the course of acquiring the knowledge" (p. 149). The basic skills for learning from experience include, at minimum, those of observation, active questioning, and synthesis (Conrad & Hedin, 1976). To teach a course "experientially" means more than to place students in active roles in the community; it also means to equip them with the skills to learn effectively in that setting.

b. As a process

James Coleman (1976) has attempted to delineate the process of learning from experience. His approach was to distinguish two distinct patterns or models of learning and instruction, "information assimilation" and "experiential learning." He acknowledged that "both processes have their virtues and faults, and neither is sufficient as the sole process for human learning (p.50). Each involves somewhat different skills in the learner and each can be said to be more or less appropriate depending on what particular things are to be learned.

Classroom-bound instruction is usually conducted through the information assimilation model whereby knowledge or information is transmitted from an instructor to a learner. At its best, Coleman observed, the process occurs through a series of steps: the first step is "reception of information," followed by "understanding the general principle," then "particularizing" (i.e., applying the principle to a specific instance), and lastly, moving form the symbolic sphere to that of action through direct "application" of knowledge gained in the previous steps.

The experiential process, Coleman continued, proceeds in almost the reverse sequence: "acting" and seeing the effects of that action, "understanding the particular case" so that one could anticipate what would happen if the same circumstance occurred again, then "understanding the general principle" under which the above occurred, and finally, "application through action" in a new circumstance.

The two processes have their characteristic strengths and weaknesses. The information assimilation process is an efficient means of transmitting stores of information, and effective in providing general principles for organizing particular facts learned. The experiential process is weaker in just those areas, but has the advantages of: providing "not only principles and facts but also sequences of actions and consequences;" (p.54) insuring greater retention of what is learned; being less dependent on a learner's competence with symbolic media; and involving learners in the point of learning-namely, its application to particular instances. It is largely because of the last feature, that learning be purposeful, that "motivation is seldom a problem with experiential learning, while teachers often see it as the major problem of learning in the classroom"(p.57). Knowledge is used and not merely accumulated like bits of string in the vague hope it may come in handy someday.

c. As a style of learning.

Further insight into the relation between experiential and other learning modes is found in the literature on "learning styles." Kolb and Fry (1975) describe learning as a total experiential process which involves four basic steps, each of which represents a somewhat different "style" of learning. The four steps, which rather strikingly parallel Coleman's steps (above) are concrete experience, reflective observation, abstract conceptualization, and active experimentation. Ideally, learning occurs in the sequence listed and leads back again to the starting point of concrete experience. The total learning process is a cycle, and "really effective learning occurs when all four learning approaches come into play, with the mix depending on the requirements of the situation" (Gish, 1979, p.5).

What is more common, however, " is that individuals develop preferences for one or two learning modes" (ibid., p.4) which they use and develop more fully at the expense of the others. Similarily, instructional systems and settings favor (and thus develop) certain modes over others. For example, most school instruction, especially at the higher levels, is framed within the mode of abstract conceptualization. One function of an experience-based program, then, is to more fully engage students in all styles of learning.

While it's impossible to do justice to the complexity of the ideas of

Olson/Bruner, Coleman, and Kolb in this general review, at least one major implication may be suggested. Schools, especially secondary schools, give priority to teaching and learning through symbolic, abstract, assimilative systems. How successfully they do so is open to question. But even if some success is granted, the schools clearly have fallen short in helping students develop their active, experiential modes of learning. They may have learned to read a book and to comprehend a lecture and may have accumulated a storehouse of disparate facts, but how practiced are they in applying this knowledge, how capable of reading and comprehending their own experiences--the skills and processes they will be called on to use most often in their adult lives? Thus, to urge more active participation is not just to make a plea for more satisfying educational experiences, or even more broadly educated adults. It is to take a stand on the fundamental skills which students must have for thinking about and dealing with their world. Only through deliberate attention to these skills will students be able, with Montaigne, to find in their experiences enough to make them wise.

Research

In the intellectual realm, as in the areas of social and personal development the question must be asked whether experiential programs produce the effects promised by the theoretical analysis. Unfortunately, the impact on intellectual development and academic learning has rarely been the subject of research into experience-based school programs. This in itself may be significant, though it's not clear if this lack of attention suggests a lack of interest, doubt (or confidence) about the outcome, lack of adequate instrumentation, or some other factor (s). No one can doubt that the task of assessing the effectiveness of any learning method is difficult. To establish that one method is "best" or even "better" than some other(s) may be impossible--perhaps even pointless. As

Joyce and Weil (1972) observed:

> There have been several hundred studies comparing one general teaching method to another, and the overwhelming portion of these studies, whether curriculum are compared, specific methods for teaching specific subjects are contrasted, or different approaches to counseling are analyzed, showfew if any differences between approaches.
>
> (p.4)

For example, among traditional categories of instructional methodology, those labeled "discovery" or "inductive" learning are most similar in process to experiential learning as described in this study Yet, despite enthusiastic support from theorists and practitioners, comprehensive reviews have been unable to establish the superiority of these approaches over straight expository instruction--or, of course, vice-versa (Shulman & Karslar, 1966; Weimer, 1974). Accordingly, the studies summarized below do not establish the unquestioned superiority of experiential learning, but illustrate the direction and trends suggested by previous research.

Micro studies. Most efforts to investigate the effectiveness of "learning by doing" have been very circumscribed studies focussing on the learning of highly specific concepts or skills. In them, the experiential process is defined as behaviors such as "manipulating physical materials, solving problems, answering questions, and following laboratory procedures" (Lewis, 1976, p.3). The object of instruction ordinarily consists of the short-run mastery of a narrow concept like bouyancy or binomial probability, or learning discrete skills like how to find the sum of any number sequence. Lewis, for example, tested the degree to which college students could learn both declarative and procedural knowledge about the concepts of shaping and stimulus discrimination through three modes: doing, observing, and reading. Among his findings were that through doing, students learned both declarative and procedural knowledge, and in rich detail. Through observation and reading they mastered only declarative knowledge and in that they were limited to what was specifically presented to them.

In quite a different study, Asher, Kusudo and de la Torre (1974) examined different methods of teaching Spanish to undergraduates. A group that learned "experientially" (i.e., executed motor commands, performed skits, acted in problem solving situations) was compared, after forty-five hours of instruction, with a group of high school students who had a year of instruction and with two groups of college students who were finishing their first and second semesters respectively. These three groups all received traditional textbook forms of instruction. The experiential group outperformed the other three groups with respect to listening comprehension and was equivalent to the first semester college students in reading skill. A high rate of transfer from listening to other language skills was observed and these skills were learned in one-half the time that was usually required in traditional textbook-oriented programs.

These studies illustrate a common form of "experiential" research. They offer (but of course don't prove) some evidence for the claim that persons not only can learn by doing, but that what is learned goes beyond mere recall of concepts and skills to gaining a greated "feel" for, and ability to apply, them in practice.

Tutoring studies. The simple form of experiential education most extensively researched is that of cross-age tutoring. The most strongly supported finding is that tutors make significatnt gains in the subject matters they teach. Two extensive reviews of tutoring research found this to be very true in every study that investigated the issue (Allen, Feldman & Devin-Sheehan, 1976, Paolitto, 1976). The subject areas commonly investigated have been math and reading with the reported gains often being quite substantial. For example, adolescent tutors in the New York Homework Helpers Program achieved a median gain of 3.4 years in reading scores in one year of tutoring (Neckritz, 1972). Whether such improvement carries over to other subject areas is more ambiguous.

The Mobilization for Youth study (Cloward, 1967) found no gain in overall school achievement, but a study of tenth and eleventh grade boys with discipline problems showed an overall increase in grade point average after serving as tutors for a term (Haggerty, 1971).

Other studies. Indications of the potential impact of experiential programs on academic learning can be gleaned from a sampling of other studies. One fairly common approach, especially in vocational career-oriented programs, has been to forego trying to demonstrate a positive effect on academic learning in favor of merely showing that students were not harmed by the experience. This has been the method---and the finding in evaluations of Experience-Based Career Education programs. Consistently they show no decline (and no gain) in basic skills (Bucknam, 1976). A comparable aim may be inferred from the rather cautious title--"Experiential Education and Retention of Competencies"--of an in-progress study by the National Center for Research in Vocational Education (Miguel, 1979). The implication of such studies is that the time spent away from traditional academic studies results in no loss of academic skills while, at the same time, it brings benefits which are unique to the experiential approach. Often, however, these other benefits (such as learning about careers) are either not well-documented or, if they are, they're classed as something other than academic, or basic, or intellectual.

Some studies have, however, attempted to demonstrate gains in academic learning. An example is the series of interventions reported earlier which were geared at deliberately promoting psychological development in adolescents. These studies consistently showed that in addition to growing in psychological maturity, the students gained significant content knowledge in the area of program focus. They became skillful in conducting and participating in democratic groups, and learned to "counsel or teach as well as many professionals" (Sprinthall & Mosher, 1976, p. 45). It would seem that only a peculiarly narrow definition of "academic" or "intellectual" would exclude these as being significant learnings.

Several studies concerned with the impact of experience on academic learning have investigated the issue primarily through self reports of participants. It was such reports that led Hennessey (1970) to observe that "political internships are intellectually, professionally, and personally rewarding," and to conclude that "one does not need to spend much time with political interns to become convinced that internships are a remarkably effective learning experience" (pp.102-103). Similarily, a series of studies of college students involved in volunteer service internships revealed that nearly all the participants felt they had gained significantly in both knowledge and skills related to their placement (Kiel, 1973). A nationwide survey of some 4,000 high school students involved in experiential programs reported that over 75% of the students felt they had learned more or much more in their experiential program than in their regular classes (Conrad & Hedin, 1978).

The kinds of academic and intellectual learning attested to by the students in these self-reports is of special interest. While reference was sometimes made to specific facts and concepts, the strongest responses centered on skills, process, complexity, awareness, and general understanding. Such reports are consistent with the theoretical argument that experience takes the learner beyond mere information, to what Weber called verstehen, i.e., a keener "feel" for the facts, deeper and more personal understanding, a heightened sense of meaning, and greater ability to use intellectual content and processes.

One study that did try to achieve more precision on what academic learning occurred in an experiential program merits special attention both for results and even more so for the interpretations of them offered by the researchers. The study was a lengthy (eighteen month), extensive, and carefully designed evaluation of the Executive High School Internship Program (Crowe & Walker, 1977). The program provides high school students, usually seniors, the opportunity to learn from intensive experience in the world of work. Students are placed with executives in business and other organizations four days a week for an academic term, and are in their home school for a seminar. It is expected that the students will acquire greater knowledge of themselves, greater self-confidence, a foundation of good work-related habits, and greater sophistication about the realities and subtleties by which organizations conduct business.

To assess the impact of the program on participants, the researchers administered a project-designed test on the principles of management, a standardized test of work habits and attitudes, and a test of writing skills. In addition, they interviewed and observed participants, analyzed student journals, and administered questionaires to interns, sponsors, coordinators, and parents. The research design involved pre and post testing, and analysis of mean gain scores for treatment and control groups. The basic findings were summarized as follows:

> An analysis of the students' test data did not reveal any statistically significant differences between the treatment and control groups post-test scores or between the gain scores of students in both groups.
>
> (p.12)

However, the researchers felt they could not conclude from this that the program had no impact. They wrote:

> Other evidence, however, suggests that interns are achieving at least some of the objectives of the EHSI Program. Interns, sponsors, parents, and coordinators felt that the program was having a postivie impact on interns...If there was a single point on which all project staff agree, it would be that interns are excited about and growing from their experiences. Clearly, learning is occurring.
>
> (*ibid.*)

In their attempt to explain the inconsistency between the quantitative data and more informal measures of program effectiveness, Crowe and Walker offered two important observations about the nature of experiential learning and the difficulty of evaluating it by conventional means. The first is that the program was "not a single program, but a series of program experiences shaped by the individualistic motives of participants and individually negotiated with work site mentors" (p.15). This is generally true of all experiential programs. As the researchers observed, "while the learning activities may be constrained by the scope of the program objectives, they are derived through negotiation and experienced individually in a unique learning environment" (p.17). This aspect of experiential learning may be understood through concepts used by Getzels & Guba (1957) to define organizational systems. Experiential education represents, using this terminology, an "ideographic" system where personal behavior is derived from and tied to individual goals and dispositions. It fits crudely, and may often conflict, with a "nomothetic" system in which roles are interchangable, behavior is predictable, the institution sets the goals, and the individual is expected to adjust to them.

This characteristic of experiential education underlies a second observation of the researchers that the internship program had, "in the best sense of the phrase, a 'hidden curriculum' expressed largely through unstated, imprecise goals that are difficult to ferret out" (p.16). The orthodox, official goals of the program cloaked a potentially threatening enterprise with a certain legitimacy, but did not describe the operating purposes. These were, in fact, more encompassing, more ambitious, and more fully achieved.

This study, and the others reported above, suggests at least two broad generalizations: 1) experiential programs can and do have a strong positive impact on intellectual growth and academic learning, and 2) the exact nature of this learning is, compared with classroom learning, less predictable, less compartmentalized, perhaps more profound, and certainly more elusive to researchers. Serious research in experiential education must attempt to assess such learning outcomes, but must not expect to uncover them through conventional instruments and single-faceted methods.

Impact on Community

When John Dewey (1897/1964) asserted that "education is the fundamental method of social progress and reform" (p.437), he had more in mind than that it was a necessary prerequisite or firm foundation for change. Rather, he was arguing that education could and should be an active and creative force for the improvement of society. Something similar is suggested by the following statement by Piaget: (in Ginsberg & Opper, 1969) "the principle goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done--men who are creative, inventive and discoverers" (pp.231-232). That is, education is not an end in itself, not a means for an individual to get a leg up on the competition, but a dynamic force for improving the social order.

The same may be argued for the separate components of development that have been reviewed in this chapter. Social development without a social consequence is prima facia nonsense. The same is true (if less obviously so) of psychological growth and academic learning. In regard to the latter, Dewey argued that "ideas are statements not of what is or has been, but of acts to be performed" and that "ideas are worthless except as they pass into actions which rearrange and reconstruct in some way, be it little or large, the world in which we live (Dewey, 1929/1960, p.138). Personal, psychological growth as an end in itself degenrates into narcisism, or in Dewey's language, "subjective egoism". He warned that "there is a radical difference between a change in the self that is cultivated and valued as an end, and one that is a means to alteration, through action, of objective conditions" (ibid., p.275). Each of these ideas is well summarized by Herbert Thelen's (1960) characterization of true education as "the humane application of knowledge".

Social improvement is not the avowed aim of all proponents of experiential learning, but it stands, for those who do accept it, as a valuable touchstone for evaluating the concept and assessing the practice. On the level of a particular program, it means that the activities engaged in by the students must be real, with genuine significance, and with clear social consequences. Without this ingredient, community experiences take on the nature of classroom games, movies, and simulations--more engaging than traditional fare, but ultimately no more important. On the level of general practice it demands of experiential programs that they meet the standard of value applied by Dewey (1929/1960) to any idea, practice, or law, that "any tool achieves dignity in the measure of needs served by it" (p.278).

That young people can benefit the community by direct participation in it is the best documented claim of experiential educators. In thousands of cities and towns across America and the world, high school students are accomplishing tasks critically needed by their communities: peer counseling, tutoring, consumer advocacy, community development and reconstruction, assistance to elderly, handicapped, or impoverished citizens. These are common activities that only hint at the ways in which students are and could be contributing to the welfare of others. More complete examples are readily available including in New Roles for Youth (National Commission on Resources for Youth, Inc., 1974), and in publications of the National Student Volunteer Program and the Association for Experiential Education.

Differential Impact of Selected Program Characteristics

In a paper prepared for the National Institute of Education, Steve Hamilton (1978) reviewed the "state of the art" in evaluation and research on experiential education. He listed four types of research questions, and ordered them by ascending difficulty and utility. The first order question is:"Do participants say they have been affected?" This question may be answered through reports of those involved in the program. The second order question is:"Is there other evidence of effects?" This demands that personal testimony be corroborated by more objective data generated from standardized or other tests, by observations of people close to the participants, or by some combination of measures. The third-order question is:

"Is there evidence that the program was responsible for the effects?" This can only be addressed by a research design which compares participants with similar nonparticipants. The fourth order question is: "What about the program was responsible for the effects?" It requires going beyond treatment/nontreatment comparisons to comparing participants receiving alternative treatments. Such alternatives may involve other experiential learning programs or systematic variations within the same program. This level, Hamilton stated, "is both the most useful and the most difficult to achieve," yet without it "there is little that can be said with assurance about the effects of experiential learning" (pp. 24-25).

An assessment of the studies reviewed in this chapter supports observation that in Hamilton's studies of experiential learning, "level three is as high as almost any have aimed and most fall lower on this scale"(p.25). A few, however, have addressed issues of program structure, albeit usually as an appurtenance to some larger focus of inquiry. The clues which these studies provide are discussed below as they relate first to participants' practicum experiences and, secondly, to their reflection on these experiences.

Experience

Type. Whether one kind of activity can be considered more worthwhile than another is an ages-old question in both philosophy and education. The question is usually posed in terms of some incongruous and alliterative pairing such as "is pushpin the same as poetry", or "is biochemistry more valuable than bocce ball". The usual answer is that "it depends." It depends, for example, on who is doing it. With apologies to Newton, being hit on the head by an apple has not been equally fruitful for all who've experienced it. It may also depend on the end-in-view, the quality of reflection that accompanies it, and on, and on. A nearly perfect circle is achieved by R.S. Peters in suggesting that what is most worthwhile is that which prompts one to ask the question in the first place (Peters, 1967).

It's not likely to diminsh philosophers' fun if experiential educators ask the same question, and it could improve the practice of education. Building a playground, tutoring, observing a lathe operator, petitioning city hall, visiting with an elderly person and ruminating in sylvan solitude all describe activities of experience-based programs. All could conceivably be engaged in for at least some similar purposes. Lacking data on the differential impact of various activities, educators are forced to either argue that any experience is good, or to posit some hypothetical connection between certain activities and certain valued ends.

Some researchers have addressed the issue by looking at the nature and degree of complexity of the experience. Biggs and Schomberg (1977) attempted to isolate the effect of various work experiences on the psychological maturity of college freshmen. They concluded that high school students who worked in an array of unskilled jobs generally showed no educational benefit from the experience while those who worked in jobs requiring more complex interactions manifested less dogmatic thinking and higher levels of moral reasoning. Owens and Owen (1979) asked high school students in Experience-Based Career Education programs what they thought made a community experience an excellent learning activity. Among the highest ranking items were "trying the work out myself" (vis-a-vis merely observing), being given "real responsibility" and "challenging tasks," and "talking with people at the site." The two lowest items were "close adult supervision" and "easy tasks." These findings parallel commonly cited guidelines for experiential programs which recommend that the tasks be seen as significant by the students and community, that they offer challenge, demand responsibility and decision-making, and that they be accompanied by opportunities for reflection on the experience (Hanna, 1937; Ncry, 1974).

Some researchers have paid particular attention to "the need to differentiate the learning potential intrinsic to particular experiences for pupils at specific stages" (Sprinthall, 1977, p.97). From studies done within the framework of developmental education, Ralph Mosher reports "it is now possible on the basis of this growing body of research to suggest what educational experiences are most appropriate to the person's stage of moral development" (Mosher, 1977, p.86). A child-care curriculum, for example, has proven effective with high school students, but ineffective with low-stage junior high pupils (Pruess, 1976). Teaching people to counsel has been effective with adolescents, but only if the students are at least at conventional levels of moral reasoning (Sprinthall, 1977). Hedin (1979) designed a differentiated curriculum based on individual students' levels of development. Lower stage students were offered more structured experiences, and higher stage students engaged in experiences demanding greater responsibility and allowing more autonomy. One of her key conclusions was that for community experiences to be effective in promoting student growth, they must be appropriate to, and challenge, the student's level of moral and ego development.

Length. In Tess of the D'Ubervilles, Thomas Hardy opined that the value of an "experience is to intensity and not as to duration" (Hardy 1919, p.139). A National Association of Independent Schools study (Blackmer & Irwin, 1977) of a variety of experiential programs adds support to this literary insight. Program duration, in terms of weeks or months, proved unrelated to how positively the students rated their experiences. Intensity (number of hours per day) and regularity of exposure (numbers of days per week) was more important. The greater the intensity and regularity, the more likely the experience was to be rated as successful.

Other findings, however, cloud the issue. Exum (1977) found that the amount of experience needed to stimulate growth is minimal. He stated that "a few hours per week is almost as growth producing as 10-21 hours per week ...

...Some real experience is clearly needed. However, there does not appear to be a clear cumulative effect, the more is not necessarily the better" (p.21). However, Reck (1978) and Althof (1977) found almost the opposite, i.e.,the longer the student was in the field experience, the greater the growth. In Reck's study of three school service programs in non-public elementary schools, students who spent approximately 100 hours in one semester in volunteer service experienced the greatest gain in moral maturity as measured by the Rest Defining Issues Test. Those who volunteered approximately 40 hours showed significant gains, though not as large as the first group; while those who worked in the field approximately 15 hours during the semester did not show any growth. Althof's study, which tested the impact of field experience on the cognitive development of college freshmen, also found that students who volunteered for larger blocks of time showed more cognitive stage change (as measured by the Perry Protocol) than students who spent fewer hours in the field. Thus, the evidence regarding the optimum amount (let alone intensity) of real experience remains equivocal.

Reflection on Experience

For most proponents of experiential learning, the having of experience implies active reflection of that experience. Dewey repeatedly emphasized the need for active thinking about experience in terms such as "no experience is educative that does not tend both to knowledge of more facts and entertaining of more ideas and to a better, a more orderly, arrangement of them" (Dewey, 1938/1972, p. 82). The quality of reflection not only determines the long-run educational utility of the experience but defines its immediate quality and meaning. R.S. Peters observed, "Both Caesar and Pompey were engaged in politics in the dying days of the Roman Republic. But the differences in grasp and conception between these two contemporaries were so staggering that they were scarcely engaged in the same activity" (Peters, 1967, p.99).

Despite, or perhaps because of, the wide acceptance of the need to combine experience and reflection, few researchers have examined the need for or the specific contribution of a reflective component. Fewer have investigated which form(s) it should take or how it might best be stimulated. Exum (1977) argued that without reflection on the practicum, students learn little, if anything, from their real experience. The basis for this claim is that students who tutored, but did not participate in a seminar, did not show increases in psychological maturity. Those who tutored and participated in a seminar did become more psychologically mature. Yet, in his description of the curriculum, there appeared to be little connection between the field and classroom experience, and it was not obvious that the seminars involved direct reflection on the tutoring experiences.

Holzberg, Gervitz and Ebner (1964), analyzed attitudinal changes in undergraduate psychology students who served as volunteers in a mental hospital. They found changes in the volunteers' levels of moral tolerance and in self acceptance, but only when the experience was accompanied by a classroom component. In a replication of this study, King, et.al. (1970) found that with no accompanying academic work or supervision, self acceptance still increased, but that there was no significant effect on moral tolerance. What neither study showed is whether the academic component without the experience may have produced the same effect.

Working with younger students, Blum (1978) showed that systematic reflection on the tutoring experience is important both for the quality of the tutoring and for the psychological growth of the tutor. In a cross-age teaching program in which sixth graders tutored mentally retarded children, those who did not have a supervisory seminar developed negative attitudes toward the children and employed more negative strategies in their teaching. The tutors who participated in a weekly supervision session used more positive teaching techniques and showed increased levels of empathy and role-taking.

Ellington (1978) studied the effect of encouraging contact between adolescents and old people. His major conclusion was that when compared to a non treatment group, a combination of contact with old people and instruction about the elderly appeared to positively change adolescents' attitudes toward the aged. No differences were found between the control group and students who had contact with old people but no instruction.

Although testimony for the importance of classroom seminars is *de rigueur* among practitioners and researchers, their value is less obvious to students. In the Owens and Owen (1979) study of what students felt made their participation in Experience-Based Career Education successful, the students rated "talking with people at the site" very highly, but gave relatively low marks to "discussing the experiences with staff" and "with other students." Independent school students quizzed by Blackmer and Irwin (1977) acknowledged the value of discussingtheir experiences, but rated seminar sessions with other students as the least effective means of doing so. Pruess (1976) found that younger students did not take seminar sessions seriously and concluded that for them journal writing appeared to be a more effective means of encouraging reflection. From their interviews with executive high school interns, Crowe and Walker (1977b) came to question the value of both journals and seminars as a way to reinforce what was being learned in the community. Students judged the logs a "drag" and did not take them seriously. The seminars were considered a "hassle" and students would have preferred spending the time at their work sites. In a thoughtful interpretation of this finding, the researchers concluded the problem was partly in the *pro forma* nature of the log assignment and partly in the quality of the seminars. But mostly the reaction of the students was "their way of saying--we like being treated as adults at our placement and the seminars remind us of school, therefore, we don't like them"(Crowe & Walker, 1977b, p. 54). Clearly it is not sufficient to say that reflection must be encouraged. Careful attention must be paid to effective means for making the reflective experiences palatable and productive.

SUMMARY

This review examined the case for experiential education through an examination of its theoretical foundations and a review of relevant empirical research. It concluded by examining how specific program characteristics relate to program effectiveness.

The first section focussed on the social development of adolescents and their transition to adult status. The major argument was that the increased isolation and passivity of adolescents has had detrimental effects both on their present social behavior and on their ability to assume adult roles. Recommendations that schools promote broader social experience were summarized. Studies examining the social impact of experiential programs were reviewed, and while the effects on social attitudes, career planning, citizen participation, et. al. were promising, the research was not precise or extensive enough to be completely convincing.

The second section centered on psychological development. Theories of intellectual, moral, ego, and personal development were reviewed, with particular stress on the role of real experience in promoting growth on these dimensions. The research evidence tended to confirm that "active doing" is an important ingredient in psychological development, particularily when combined with "active thinking" and with attention to the appropriateness of experience to the present developmental level of the individual.

The third section considered experience as a means toward intellectual development and academic learning. Experience was described as one method of learning, as a guard against meaningless abstraction, as a means for extending one's world, and as a stimulus for personal learning. The method of learning from experience was discussed as a set of skills, a process, and a style of learning. The research evidence suggested that experiential programs can and do have a positive impact on learning, but that the exact nature of this impact is relatively unpredictable, difficult to define, and elusive to ordinary methods of research.

The fourth section discussed the requirement that student experience be provided and evidence that adolescent's efforts have often been directed toward improvement of society.

The fifth section addressed the issue of how experiential programs should be structured to achieve their maximum potential. As yet there has been too little research in this area to provide much practical guidance to practitioners.

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